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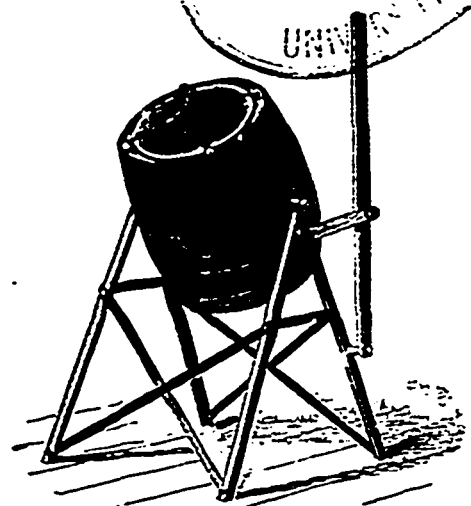
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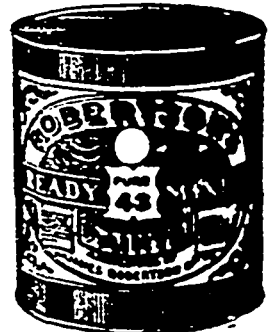
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FARMING

VOL. XVII.

JANUARY 16th, 1900

No. 19

Canadian Horses for the Cape

The announcement made early in the week that the Hon. Sydney Fisher, Minister of Agriculture, had received a cablegram stating that the Imperial Government is prepared to buy in Canada on satisfactory terms 1,000 horses and 1,000 cases of canned beans for the use of the Imperial troops in South Africa has created somewhat of a flurry in horse circles. While there are plenty of horses of certain kinds in the country, really fine types suitable for cavalry purposes are not so plentiful. Besides, the good horses are so scattered over such a wide area that it will take considerable time to make selections and secure the quality required. However, we think the number required can be secured, and the taking of so many good horses will certainly improve values and greatly stimulate horse-breeding throughout the country. The Minister of Agriculture is to be congratulated on securing this order, and it is to be hoped that he will be able to fill it with the type of horse required. To attempt to supply this demand with anything but the quality and type required would be a mistake that would react in preventing further orders from coming our way.

There is a difference in the kind of horses required for active service and for regular garrison duty. While a fiery-tempered horse might do in the latter case, in active service only such horses are wanted as can be easily controlled on the field of battle. For cavalry purposes they require to be from 15.2 to 15.3 hands high, weighing from 1,075 to 1,150 pounds each and within an age limit of five to seven years. They must be sound in every way, standing well erect, strongly built, and with their general appearance good. A little good breeding adds to their value. The maximum price to be paid is not to exceed \$150 each, and they will be bought for as much less as the market will allow. Quite a number of horses are required for the second Canadian contingent. A great many horses offered for this purpose have been rejected. One dealer reported that out of some 150 offered only about one half were taken. Only the very best are selected, though it is reported that some parties authorized to purchase horses in the country have shipped in some very inferior animals.

Should the Provincial Winter Show Move Around?

In a few weeks the representatives of the various breeders' associations who control the Provincial Fat Stock, Dairy and Poultry Show will meet to arrange plans for next winter's exhibition. A question of importance that should come up for discussion is whether it would not be advisable to secure the permanent location of the show. The difficulty of securing suitable buildings in which to hold the show makes it almost imperative that some central point should be selected where each year the show should be held. The many new features that have been added to the show of late years, and the increased and special accommodation required for the show proper, render a movement in this

direction a necessity. If it were possible, following the itinerant plan to secure suitable accommodation each year there would be no reason for changing. But the experience of the past three or four years has shown that such accommodation cannot be secured at every point where it would be advisable to hold the show in following out the itinerant plan and it is unreasonable to expect any city or town to go to any great expense in providing proper buildings, etc., for a three or four days' show that can remain only a year or two at most. If it were decided to locate the show permanently at one place, say for eight, ten or more years, there are many cities in the province that might be induced to put up suitable buildings, and to provide the necessary accommodation for the show, free of charge.

We believe that nearly all the breeders who patronize the show, and others interested, will agree with this view. But it is one thing to have certain views on a subject and another thing to act. The Provincial Winter Show is too valuable an educational factor in the development of the live stock interests of this country to have its efficiency impaired by any indecision in this regard. Now is the time to act, and we are led to believe that united and systematic effort on the part of the breeders along the lines we have indicated will meet with the hearty approval of the Government, which might be induced in such case to increase the annual grant to the show. Everything will depend upon the action of the stockmen in this matter. If they are willing to go on year after year holding the show at places where suitable buildings cannot be secured, as was the case last year, they will likely be allowed to do so. But we mistake very much the spirit of the breeders of this country if they do not take advantage of the present crisis in the history of the show to secure permanency and suitability in the accommodation provided by doing away with the itinerant plan.

The itinerant plan has been tried with other exhibitions in this country and has been found unworkable and unsatisfactory, as in the case of the old Provincial Exhibition. The great English Royal Show follows the itinerant plan, but there are doubts about the advisability of doing so even in its case. Last year's show at Maidstone was far from being as successful as those of other years because of the place where the show was held. A good example of a permanent exhibition and one that is almost identical in its interests with our winter show is the Smithfield show. This has been held in one place for over a century and is to-day as successful and as full of vigor as it ever was. A permanent location of the show makes it possible to have suitable accommodation provided which can be improved upon year after year as new features are added and the necessities of the case demand.

As to the place where the show should be located and the means to be adopted to secure the proper accommodation, much might be said. We have no desire to mention one place in this connection to the detriment of any other, but in discussing this question recently with several interested parties, the cities of Brantford and Guelph were prominently put forward. One of the most, if not the most, successful shows ever held was that of 1898, at Brantford, and many stockmen in consequence have a friendly feeling for that locality. Besides, the citizens of Brantford exerted themselves in an energetic and enthusiastic way to make the show a success, and might

be induced to do something pretty big should the show locate there permanently. But the claims of Guelph are many and cannot be overlooked. Its nearness to the Ontario Agricultural College, and the fact that a fat stock show has been held there for a number of years, are strong points in its favor. We do not know whether there is any ground for it or not, but there is a feeling, and it may do no harm to mention it here, among many stockmen, that the citizens of Guelph were not as liberal in their dealings with former shows held there as they should have been, and did not cooperate as actively as other places in making the show a success. However this may be, we think their opportunity has come for retrieving any former carelessness there may have been in this regard, and if the citizens of the Royal City are prepared to deal handsomely with the show in the way of suitable buildings, etc., it might be possible for them to secure its permanent location at that point for a number of years.

With regard to the best means of securing the proper accommodation several plans have been suggested. One is for the Government to erect suitable buildings for holding the show on the grounds of the Agricultural College at Guelph. Another, and one which seems more in favor is for the city or town, where it is decided to locate the show permanently, to agree to provide all the accommodation required in the way of buildings, and the live stock associations or the show whatever is required each year in fitting up these buildings for the show. This seems like a fair arrangement, and one, perhaps, that would give better satisfaction than the one followed heretofore. However, these are matters of more or less detail. The great question to be decided is that of locating the show permanently. We are convinced that the future success and usefulness of the show makes it imperative that this should be done, and we would be glad to have the views of stockmen and others interested as to the advisability of doing so.

Pasteurizing in Butter-Making

An important subject for discussion at the dairymen's conventions, which are being held this month, is pasteurizing the milk or cream in buttermaking. Many have felt that the system was not practical in large creameries where large quantities of milk were handled. But this is not correct. Where the proper appliances are secured pasteurizing can be carried on in our large factories without any serious difficulty. Many of our best creameries have already adopted this plan and the more uniform and better flavored product that has resulted warrants the adoption of the practice by all our factories. If all the butter sent to Great Britain were made from pasteurized milk or cream, we are sure it would result in a greatly increased demand and a better price for our product. Pasteurizing gives to butter that fine, mild, clean flavor so much in demand in Great Britain, and it is therefore of vital importance to the dairymen of this country in developing their export trade in butter.

There have been objections raised to this question of pasteurizing by persons largely engaged in handling butter because they claim that it makes the butter salty and insipid. There does not appear to be any good ground for raising this objection where the system of pasteurizing is properly carried on. In fact the evidence is all the other way and shows that pasteurizing greatly improves the flavor of the butter and makes it more acceptable to the English consumer. The Danes recognize this and adopt pasteurizing very largely in their system of butter-making. Danish butter, as a rule, brings from 2 to 6c. per lb. more than Canadian in the British markets, and experts tell us that this extra price is obtained largely because of the pasteurizing methods used in making the butter. It gives the Danish butter a uniformity and a permanency in flavor which the butter from other countries has not,

and makes its quality such that it can always be depended upon. While Canadian butter has greatly improved in quality of late years, and is fast making a name for itself in the markets of Great Britain, it certainly lacks to some extent that uniformity and mildness of flavor so desirable in the Old Land, and which the Danish article possesses. The missing link in securing this desirable quality in every pound of butter sent across the Atlantic seems to be pasteurizing, and it is time that all our creameries were giving some attention to this matter. Some of the best creameries, and those which obtain the best prices, have adopted it with marked success, and it now seems urgent that all factories should fall into line and endeavor to secure the quality in our butter which the English consumer desires in every pound of it sent out of the country. If our creameries were catering to the Canadian trade alone this matter would not be so urgent. The somewhat depraved taste which exists among many Canadian consumers for butter with a more or less decided flavor, whether it be good or bad, perhaps makes pasteurizing a work of supererogation, so far as the butter they consume is concerned. But, however that may be, it is quite evident that we cannot secure the fine, mild, pure flavor in all our butter exported, and which is so desirable in the British market, unless some definite plan of pasteurizing is adopted by our creameries. This is one of the problems that confronts dairymen to-day, and it is for them to deal with it in a way that will bring increased prices and a better demand for our products in the markets of Great Britain.

Ontario Poultry Association

The Ontario Poultry Association held its annual exhibition at Peterboro last week. The attendance was not as large as usual, nor was the number of birds shown equal to that of last year, when the show was held at Toronto. A good, practical feature was the talks on fattening, killing, and dressing poultry by Prof. Gilbert, of the Central Experimental Farm, Ottawa. A full report of the show, specially prepared for FARMING by a practical poultryman, will appear in next week's issue.

Water System for Dairy Stables

By R. Malcolm, Braeside Farm, Kinloss, Ont.

Having been a reader of FARMING for the last five or six years, and, being in the dairy business, have found it to be an up-to-date paper for the times. In reply to the Quebec farmer's question wanting information on watering cows in the stable, would say that we have a system that has given good satisfaction, and may be of value to him. There are many advantages in having plenty of good, pure water in the stable, especially for milk cows. In the first place a never-failing well or spring is necessary from which the water can be drawn. If water has to be pumped a good wind-mill is the proper thing to do the work, inch piping being sufficient to convey the water to stables. A large tank is necessary to hold a supply that will last four days at least, for there are some days that the mill will not work. This tank should be in a sheltered place, and high enough that the bottom will be as high as all drinking troughs, and should have a float valve to prevent overflowing.

All pipes are under ground to be out of the way and free from frost. A good plan is to have a drain for the pipe to pass through as it is a great protection from frost. The water is taken from a large tank into the stable by an inch pipe. It is first delivered into a box that is on a level with the drinking troughs. This box has a float that always keeps the water at the right level. There are two

pipes in this box; the one coming in has the float on, the other goes out into drinking troughs.

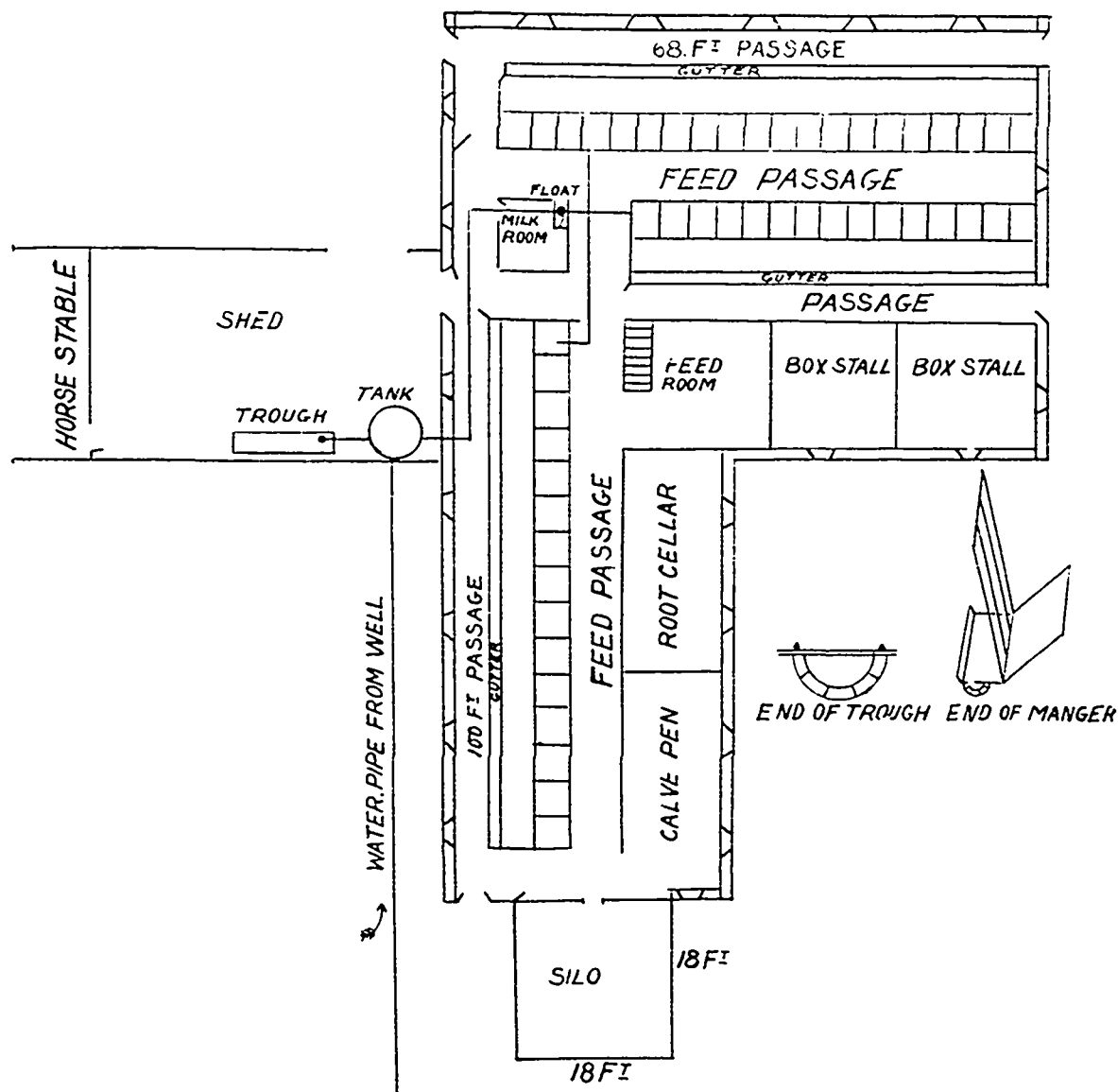
The troughs are made of $1\frac{1}{2}$ inch pine staves as shown on diagram, and there are iron hoops every two feet which are made of $\frac{5}{8}$ round iron with a good long thread on each end, and a piece of wood is put across the top of trough, which the ends of the hoops are passed through and tightened down with nuts. When putting trough together all end joints should be broken and the inside of the trough should get a good coat of pine pitch. It should also be covered to prevent dirt getting into it. A small part of the cover should be hinged so that the cow can lift it with her nose to drink.

An upright pipe is put on in a convenient place in the stable with a tap on it for getting a pail of water when needed. A rubber hose with nozzle is also made to be

CHEAPER PRODUCTION.

The annual address of the president, Mr. D. Derbyshire, Brockville, Ont., carefully reviewed the work of the past year. An important point touched upon was that of cheaper production, of which he spoke as follows:

"Probably the greatest problem before us at the present time is cheaper production, and if our patrons are to make money this problem must be studied. Manufacturers and all business men are studying this subject most earnestly, and our dairymen must. If we could only get our patrons to do as well as two or three of the best patrons sending milk to each factory in our country are doing, it would add millions of dollars to our dairymen; or if we could by any way get our patrons to grade up all their cows to give as much milk as one or two of the best they now have, what an advancement it would make! It is all-important that



Plan of Stables of R. Malcolm, Kinloss, Ont., showing system of conveying water to his stock in the stable.

attached to the tap for damping the feed, which is an excellent plan. We have had the water in front of all the nattle for three or four years, and would not be without it cow for several times the cost.

Eastern Dairymen Meet

The twenty-third annual convention of the Butter and Cheese Association of Eastern Ontario took place at Madoc on Wednesday, Thursday and Friday of last week. The attendance was good, and close attention was paid to what speakers had to say on the important subject of dairying.

we increase the quantity of milk furnished to each factory in our whole country, and to improve the quality as well, and I believe the patrons should be brought together at least once a month, have a large blackboard, with each patron's name on it, and put opposite each name the quantity and quality of milk furnished by each, and discuss the matter fully, how each feed, and get every patron interested, and you will find that your patrons will go to work as they never did before. Discuss cheaper production, improving the stables, building silos, and every matter pertaining to the business, and you will be rewarded. We must get at the man that makes the milk and encourage him, and you will see 1900 the greatest season in the history of our dairy business in this province."

Reference was made to the transportation facilities provided by the Dominion Government in securing the marketing of Canadian butter in the best condition. These efforts should not be relaxed and something should be done in the way of improved service in the shipment of cheese.

After the appointment of the usual committees for carrying on the work of the convention, short addresses were delivered by A. F. Wood, ex-M.P.P., Madoc; J. R. Dargavel, Elgin; E. Kidd, North Gower, and J. Augustus Hay, of the District of Bedford Association, Quebec; all bearing along the line of cheaper production and the improvement of the quality of the product.

THE DAIRY HERD.

The development of a dairy herd of cows was dealt with in a practical way by Prof. Grisdale, of the Experimental Farm, Ottawa. After describing the ideal dairy cow as one with a long deep barrel, showing large stomach capacity, with a large mouth to take in food to fill that big abdomen, and with large milk veins and a big udder, he urged selection of food to meet the requirements of that type of animal and the heavy draughts made on it by milk production. Plenty of rich nitrogenous foods, such as meals, should be given with her ensilage and roots. Selection in breeding was also dwelt upon. Only pure-bred sires should be used, and only the best. The dam of both sire and dam should have been good milkers. Cull pure-breds were worse than good grades.

PASTEURIZATION.

This important topic was discussed on the first day by Mr. J. W. Hart, Superintendent of the Kingston Dairy School, in which he strongly advocated the pasteurizing of milk, and the use of pure cultures in butter making. This was calculated to improve the quality of butter, and so equal Danish butter in quality and price. He stated that 95 per cent. of creameries in Denmark practised the system, and so did many of the best establishments in the United States and Canada. Pasteurization has been most successful at the Kingston Dairy School, and was easy to accomplish in any well-regulated creamery. He then described the method in detail as practised at the Kingston Dairy School.

ROMANCE OF AGRICULTURE.

At the evening session of the first day an able address was delivered on this subject by Mr. C. C. James, Deputy Minister of Agriculture, Toronto. He showed that agriculture was the leading industry of Canada, and that while the annual value of our factories was four dollars per head, our mines six dollars per head, and our forests sixteen dollars per head, our annual agricultural wealth totalled 120 dollars per head. The gold product of the whole world in 1898 was \$280,000,000, while the agricultural product of Ontario alone equalled that sum. The wheat crop of this Province nearly equalled the mineral product of the Dominion for the year. He claimed that selection of seed and greater care in tillage would add millions of dollars to the one item of wheat alone. He explained the method adopted of fighting the San Jose scale, showed the value of clover in increasing the nitrogen in the soil, and gave other useful hints regarding agricultural development. He closed by showing how certain fruit-growers had added untold value to the wealth of the world by developing certain varieties, such as the Concord grape, and then pointed out that entomologists had saved millions annually to the country by discovering parasites and other remedies for insects and fungi that attacked fruits.

CHEESE-MAKING.

This subject was ably discussed by Mr. G. G. Publow, of the Kingston Dairy School. He dwelt more particularly upon the importance of using the milk of cows in good health which had eaten no food which would give bad flavors. Filthy surroundings should be avoided by the

dairymen. Great care should be exercised as to the time of setting milk for cheese-making, and the quality and quantity of rennet should receive close attention. Salting also required more care than many makers gave it. He said that many makers were often astray in thinking that the acidity came from the whey around the curd, and that the draining of the whey removed the acid. He held that the acidity came chiefly from the whey in the curd. He believed in using starters in making cheese under certain conditions, but if there was a good flavored milk he would not use a starter. In fact, he would use a starter only to get rid of taint or bad flavor. Cheese which had developed too fast and with too much moisture in it, would soon break down. He would let the curd lie for two and one-half or three hours from the time of adding the rennet. He advised deep piling for best flavor, although the contrary plan, perhaps, gave a greater quantity of cheese.

In the discussion which followed makers were strongly warned against curing cheese at too high a temperature. Careful and frequent turning of the cheese was necessary to prevent bitter flavors developing. The whey tank and the returning of whey to the patron in the milk can were strongly condemned by most makers present, though some advocated returning in the milk cans under cleanly methods.

THE CURING-ROOM.

The methods of securing proper conditions in the curing-room were discussed by Mr. J. W. Newman, whose chief points were proper insulation, lessening radiation and makers having a knowledge of and keeping records of their particular conditions. He then described the three leading methods, recently introduced, to control temperature in curing-rooms. First, the air-duct under an ice-house near by; secondly, water being evaporated by the air over a low simple curing-room; and, thirdly, by compressed air, through means of the Westinghouse air brake.

"Bacterial contents of cheese in regulated and unregulated curing-rooms," was the subject of a valuable paper by Dr. W. T. Connell, of Queen's University. He held that normally in cheese the greatest bacterial contents are found in cheese from one to four days old. Following that period there is a gradual and continuous decline in the number of bacteria. The bacterial contents remain high longer and the decline is more gradual in cheese kept at the regulated room temperature, or about 65 degrees. Lactic acid bacteria are practically the only bacteria found in normally cured cheddar cheese. Gas producing allied forms of bacteria are found in large numbers in tainted or "open" cheese. Cheese in the ordinary or variable curing-room ought to go off flavor more commonly and earlier than that in the regulated curing-room. Bacteriologists are still practically unaware of the rationale of the curing process. It is quite certain, however, that the curing agent is either in the milk or is formed during the process of manufacture and in the few days immediately following the placing of the cheese in the curing-room. Cheese made under the same conditions was more valuable and likely to keep better when cured in a regulated temperature than when cured in an ordinary curing-room under varying conditions.

This address was followed by an address by Prof. Grisdale, on hog raising, in which he advocated the use of whey and skim-milk in connection with pasture for young pigs. He regarded skim-milk as worth twice as much as whey, and which elicited much discussion.

EVENING SESSION.

At the evening session of January 11th a number of speakers took part and discussed topics of a more or less general nature. Mr. F. W. Hodson, Dominion Live Stock Commissioner, described the methods followed by the Ontario Department of Agriculture in the shipment of pure-bred stock and the development of inter-Provincial trade. Mayor Johnston, Belleville, gave a patriotic address, and Prof. H. H. Dean, of the Ontario Agricultural College, gave some interesting experiences at the Vermont Dairy

convention. When at that gathering he mentioned the sending of the Canadian contingent to South Africa, three cheers were called for by the "Yankees" for the Canadian boys and the Queen. The last speaker was Mr. C. C. James, who spoke upon "Our province and its people."

The Cheese Trade of 1899

The cheese season of 1899 has undoubtedly been a remarkable one. Though the drouth season was an extended one and very severe, yet the volume of the output was well maintained throughout the year. The exports for 1898 and 1899 will figure out about the same with last season's make, realizing about \$1.40 per box more on the average than that of 1898. The net result of all this is an increase of fully \$2,000,000 in the returns to the farmers.

Prices throughout the year have been well maintained, though the difference between the highest and the lowest prices has been greater than for some years back. This reached the wide margin of 5¼c. per lb. The fluctuation in price was as much as 3c per lb. in one month, that of August, when the cost prices ranged from 9¼ to 12c. One point worthy of attention by Western dairymen more particularly, is that the factories west of Toronto have had to be content with ¼ to ½c. per lb. less than factories in Eastern Ontario and some of the Eastern Townships (Quebec).

This difference in price is said to be due to the fact that the factories East turn out a richer cheese with a softer body than the old firm, keeping cheese for which some Western districts are noted.

From a review of the season's trade from Montreal published by the *Gazette*, we take the following tables giving the quantity shipped from that port, the cost price, cost value, etc., as well as the course of prices during the different months.

	Quantity	Cost price per box.	Spot price per box.	Cost value	Spot value
1899	1,896,496	\$7 75	\$8 00	\$13,698,000	\$15,171,968
1898	1,900,000	6 35	6 60	12,065,000	12,540,000
1897	1,402,985	6 75	7 00	14,195,000	14,720,000
1896	1,726,226	6 75	7 00	11,605,000	12,083,000

COURSE OF PRICES.

		1899		1898		1897		1896		1895		1894	
		High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
May	W	9½	8¼	8½	6½	10	8½	7½	6½	7½	6½	10½	9½
	E	9½	8	7	6½	8½	8	7½	6	7	6	10½	9½
June	W	8½	8	8	6½	8½	8	7½	6½	8½	7½	9½	8½
	E	8½	7½	7½	6½	8½	7½	7½	6½	8½	7	9	9½
July	W	9½	8½	7½	7½	8½	7½	7	6½	8½	7½	9½	9
	E	9½	8½	7½	7½	7½	7½	6½	6½	8½	7½	9½	8½
Aug	W	12	9½	8½	7½	10½	8½	8½	7½	8½	7½	10½	9½
	E	10½	9½	7½	7½	9½	7½	8½	7	8½	7½	10½	9
Sept	W	12½	10½	9½	7½	9½	9	9½	8½	8½	7½	11½	10½
	E	12½	10½	9	7½	9½	9½	9½	8½	8	7½	11½	10½
Oct	W	11½	11	9	8½	9½	8½	10½	10	9½	7½	10½	9½
	E	11½	10½	9	8½	9	7½	10½	9½	9	7½	10½	9½
Nov	W	10½	10½	9½	8½	8½	8½	10	9½	9½	7½	10½	9½
	E	10½	10½	9½	8½	8	7½	9½	9½	9	7½	10½	9½

Farm Machinery Number

Special attention is directed to our Farm Machinery Department in this issue. It will be found full of practical and valuable ideas pertaining to implements in use on the farm.

Agriculture in Yukon

The Yukon country is generally looked upon as a land of gold and "cold." That many who have journeyed to that land have secured both is no doubt true, and that every such one has experienced the latter is absolutely true, but that the country is capable of becoming considerable of an agricultural country has been left for some of our American friends to demonstrate. Vice-Consul Morrison, of Dawson City, has sent to the Department at Washington under date of Oct. 16th, 1899, a report on the results of agricultural experiments, written by a resident of Dawson, which reads in part as follows:

"Grain has done exceptionally well, being well filled, and I see no reason why it should not be extensively and successfully grown here. As far as my observations go, the climate here is as suitable for raising winter wheat as in any place in the north-western or the northern states of America. From my experience of the last two years, I see no reason why this country should not be able to produce its own vegetables and grains.

"As for flowers, the success I have had proves that all hardy annuals will do well. The coming year I intend planting several hundred hybrid roses; also summer-flowering bulbs, a large variety of other hardy and half-hardy annuals, and some of the hardy perennials. Small fruits, such as strawberries, currants, blackberries and raspberries, should do well. Currants, raspberries, cranberries, strawberries and blueberries grow wild here."

Producing Milk at the Lowest Cost

A prominent institute worker in eastern Ontario sends the following in regard to producing milk at the lowest possible cost:

"The principle of successful dairy farming inculcated by almost every speaker that has come this way to address farmers' institutes has been, practically, that as you cannot control the price of your product you must reduce the cost, and this can be done in several ways: Do not board cows for the fun of it; cull continually, and dispose of all animals which do not come up to a certain standard; keep your cows comfortable, with water before them at all times; grow bulk in the shape of ensilage corn and clover hay, which you can produce cheaply, and buy nutriment in the shape of provender, bran, cotton seed meal, etc., which other people can make cheaper than you can; milk your cows ten months in the year, and save your manure under cover, spreading it about as fast as it is made, thus increasing the fertility of the soil to grow more food, to make more milk, and so on in a never-ending rotation.

"This may be called the dairy gospel for wealthy or at any rate well-to-do farmers, but the objection raised to it by our people is that it does not altogether fit the case of those whom the institutes are principally intended to benefit—the poor men, who must make the best of what they have, and have little money to buy rich foods, however much they may desire to do so. It has remained for Mr. A. M. Campbell, of the Indian Lands in the county of Glengarry, to preach a new gospel in several respects, and, at a couple of meetings in Cornwall and Stormont last year, to set before the people a means of getting a plentiful supply of milk at a small cost, and without buying any condensed foods, or at any rate very little. As a rule, speakers are chary of telling about their milk record; in fact, there is more than a suspicion that a few years ago, before the work of the institutes was systematized and the qualifications of speakers carefully looked into, a good many of them had no records to give, and not much experience, taking their alleged facts from books or out of their imagination. Mr. Campbell, however, has been giving his records out for the benefit of his brother farmers for years, and while there is some fluctuation, owing to circumstances beyond his con-

trol, the movement has been upward all along. Last year, with twenty-five cows, including several two-year-olds, his total product in ten months was 161,531 pounds, an average of 6,461 pounds per cow. This, it may be said, is probably double the average yield in this section of Ontario. How it may compare with the west I don't know, but I imagine very favorably. There is no question about the truth of the figures; Mr. Campbell's veracity is unimpeachable.

"Mr. Campbell's plan is to some extent the same as outlined above, but in one vital point it differs. His practice is to raise all he can at home, any quantity of ensilage corn, using varieties that make plenty of ears and ripen them, in preference to the tall, juicy western stuff that does not mature; plenty of clover, plenty of peas or vetches and oats, plenty of mangels or sugar beets, and to buy the very smallest quantity of nitrogenous foods necessary to balance the ration. Large as his milk average is, he hopes to very materially increase it in the near future. His herd is now good grade Ayrshire, but his idea is that by using a Holstein bull of the best milking strain he can find he will gain several hundred pounds on the average. What do you think?"

CORRESPONDENCE

Westphalian Hams

To the Editor of FARMING:

DEAR SIR,—Re the formula for curing hams by the Westphalia method, as published in the issue of FARMING for Nov. 28th, 1899, I beg leave to submit a note.

The two ingredients, saltpetre and sal prunella, are simply two forms of the same substance, the nitrate of potassium. The former is the natural form of the salt, and the latter is the same salt which, after melting, is poured into small spherical moulds. The only virtue that it can have over the saltpetre is the increased cost, but of course with a better price for the resulting product the cost is immaterial.

D. M. HAMILTON.

Saltcoats, Assa., Dec. 30th, 1899.

10,000 Dollars in Cash Prizes

An Effort in a New Direction to Educate Boys and Girls.

To the Editor of FARMING:

By the kindness of a generous friend who loves to stimulate the activities of boys and girls in farm homes in such directions as will lead them out (educate) into happy and useful lives, I am able to offer 10,000 dollars in cash prizes for the selection of seed grain on farms in all the provinces, on a plan which will lead to great improvement in the crops throughout the whole country.

[Prof. Robertson here quotes some extracts from his evidence before the House of Commons Committee on Agriculture and Colonization last spring, but as we gave a summary of this in our issues of May 16th and June 20th last, it need not be repeated here.—ED.]

TO STIMULATE AND ENCOURAGE THE BOYS AND GIRLS.

It is highly desirable that the boys and girls in farm homes should study this subject and begin the selection of seed-grain under the advice and supervision of their parents and teachers.

I. The competition in every province will be open to all boys and girls in it who have not passed their eighteenth birthday before the 1st January, 1900.

II. There will be separate competitions for each pro-

vince; and the Northwest Territories are to be considered as one province for this purpose.

III. The main competition will continue for three years; and the prizes will be awarded to those who obtain the largest number of marks on the following plan:

(a) Any acre of oats, on the farm at which the competitor lives, may be selected for 1900; one mark will be awarded for every pound in weight of grain of good quality obtained from the acre in 1900.

(b) Before the grain is harvested in 1900, a quantity of large heads shall be selected to yield enough heavy plump seeds to sow one acre in 1901; and two marks will be awarded for every pound in weight of grain of good quality obtained from the acre in 1901.

(c) Before the grain is harvested in 1901, a quantity of large heads shall be selected to yield enough heavy plump seeds to sow one acre in 1902; and three marks will be awarded for every pound in weight of grain of good quality obtained from the acre in 1902.

(d) The competitor who obtains the largest number of marks in the total of the three years will receive the first prize in the province; the competitor who obtains the second largest number of marks, the second prize; and so on for ten prizes in every province.

(e) There will be also prizes for wheat on the same plan.

(f) The following show the prizes for one province:

	Oats	Wheat.
1st Prize	\$100	\$100
2nd "	75	75
3rd "	50	50
4th "	25	25
5th "	15	15
6th "	10	10
7th "	5	5
8th "	5	5
9th "	5	5
10th "	5	5
	\$295	\$295

(g) There will be sets of prizes as above for Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Manitoba, Northwest Territories, and British Columbia, respectively.

IV. There will be also sets of prizes annually for the 100 heads of grains which contain the largest number of seeds of the best quality picked out of those selected from the acre each year.

(a) Any 100 heads from the acre entered for competition may be picked; one mark will be awarded for every seed on the one hundred heads and two marks for every grain (in weight) which those seeds weigh.

(b) The competitor who receives the largest number of marks will receive the first prize in the province; the competitor who obtains the second largest number of marks, the second prize; and so on for the ten prizes in every province.

(c) The following show the prizes for one Province for 1900:

	Oats.	Wheat.
1st Prize	\$ 25	\$ 25
2nd "	20	20
3rd "	15	15
4th "	12	12
5th "	10	10
6th "	8	8
7th "	5	5
8th "	5	5
9th "	5	5
10th "	5	5
	\$110	\$110

There will be sets of prizes as above, for Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Manitoba, North-West Territories and British Columbia respectively, in 1900, and also in 1901 and 1902.

Summary : 100 large heads.			
1900 :	Oats	\$110	
	Wheat	110	
		<hr/>	
		\$220 × 8	\$1760
1901 :	do		1760
1902 :	do		1760
			<hr/>
			\$5280

Three year lb. grain per acre competition :

Oats.....	\$295	
Wheat..	295	
	<hr/>	
		\$590 × 8 = \$4720
		<hr/>
		\$10,000

V. All those who desire to enter the competition should send their names and addresses to Professor Robertson, Ottawa, before the 1st May, 1900. These communications should contain only the words "Entry for seed grain competition," and the full name and address. They will be carried by mail free of postage.

I particularly request that no questions be asked on these entry applications. Full particulars will be mailed in good time to every one whose entry is received; and I am sure the newspapers will accord their much-prized courtesy and help in giving publicity to any further announcements. The competitors will doubtless number many thousands, and it will not be practicable to write letters to them individually. The plan provides for 64 prizes, of which 16 are \$100 each; 16 are \$75; 16 are \$50 each; and 64 are \$25 each.

I invite the teachers to join in helping forward this educational movement. I would not on any personal, private or selfish matter add one straw to their already heavy burdens of labor. I think they do the most valuable and the most poorly-paid service of all the workers in our country. However, in this case although they may neither seek nor expect material reward, they will, with the certainty of seed time and harvest, win the fulfilment of the apt promise "Cast thy bread upon the waters: for thou shalt find it after many days."

JAS. W. ROBERTSON.

Ottawa, Jan. 1st, 1900.

Clover and Phosphate

To the Editor of FARMING:

In your report of the annual meeting of the Ontario Fruit Growers' Association, in FARMING for Dec. 12th, some reference is made to the address of Mr. Powell, of Ghent, New York, but so brief is your summary that but a slight idea of his views on the important subject of manuring can be gained from it. Some points brought out, however, command attention. His reference to the requirement of humus in the soil is important, but the correctness of the popular idea that this humus is needed principally to "hold moisture" may be challenged. While a soil will assuredly hold moisture better for being well supplied with humus, such moisture holding action is but a secondary function of humus. May we not consider humus as the basis of plant food in the soil, and the soil the stomach of the plant. The humus resulting from the decomposition of organic matter in the soil (stomach) of itself supplies material from which the plants with their weak acids can obtain soluble food. Also the humic acids produced by the humus dissolve and free other ingredients in the soil which forming humates provide more food for the plants. It is the combining of these dissolved ingredients in the soil which then gives the plant the necessary proper food. All this is wonderfully similar to the process of animal digestion, only that in the latter case the one living being is detached from the earth and moving about carries in its stomach a mass of material to dissolve from,

while the other, being the plant, being fixed, passes its rootlets through a stationary mass. And here we open another important point. As the animal takes into its stomach a great deal more food than it can dissolve and uses only the most available portion of it, so the plant should be similarly supplied with an abundance so that it can gather from it its requirements in a given time. But as in the case of the animal, so in that of the plant, an unbalanced ration in the stomach causes first an undue development of certain organs or peculiarities, and the want or poverty of one important ingredient retards development.

I am as strong an advocate of clover manuring as any of my neighbors, but I deprecate the teaching which seems to be running riot on it. Clover adds importantly to the soil in nitrogen obtained freely by it from the atmospheric storehouse, and I look upon it as the proper source of nitrogen for farming, but clover is a rank feeder of phosphoric acid, and needs a copious supply of it to enable it to get that nitrogen and so develop protein compounds.

Clover-growing for the feeding of the following crops or cattle impoverishes the soil in phosphoric acid, and by-and-by the soil fails to produce clover or anything else satisfactorily, because the phosphoric acid available becomes reduced. This reduction of phosphoric acid leaves the clover unable even to assimilate nitrogen.

In such a condition as this an experiment would surprise us by showing that clover would respond to an application of nitrate. This of course we know is not a natural condition of clover, but misleading experiments of this kind crop up here and there unexplained in reports, and bewilder the experimenter and his readers.

As Mr. Powell has been growing fruit and trees on the soil he describes, he must steadily decrease the phosphoric acid. I would expect the first indication of it would be found in the development of the reproducing power of the fruits, in the keeping qualities of the produce, and in the hardness of the wood, but I might be mistaken in this, for the clover itself may show the first evidence of deterioration. As may be inferred, I advocate phosphating for clover, but on soils well supplied with humus the phosphate of lime used should not be water soluble, but in a condition to yield readily to the humic acids. Just on the moisture point we should bear in mind that a soil rich in easily soluble material will suffer less in a drouth than a poor soil, for the plants will not require so much water if that water is rich in nourishment; and they will do better, for a teaspoonful of fluid beef in a cup of water has as much strengthening power as the same amount in a gallon, with the further benefit of less strain on the system.

I would add to Mr. Powell's advice of clovering for nitrogen the timely warning to balance the nitrogen with phosphate. It may be worth noting that peas and vetches are quite as successful agents for obtaining nitrogen from the atmosphere, but, being cultivated plants, require more soluble phosphate to develop the nitrogen-gathering power. Even the graminaceæ will not make full use of the nitrogen presented to them in the soil if they are not well supplied with phosphate.

Fernside, Jan. 10th, 1900.

T. C. WALLACE.

Cement in Farm Structures and Buildings

Synopsis of an Address Delivered by Mr. Isaac Usher, Queenston, Ont., at the Farmers' Institute Meetings in Manitoba

To the Editor of FARMING:

I was requested in a letter of October 16th from Mr. Hugh McKellar, Secretary of Farmers' Institutes for Manitoba, to write a copy of my address for publication in his annual report of Institute work. My absence from home

at that time prevented me from doing so, but having leisure at present, I thought a copy of it in your widely-read paper might be acceptable to your many readers. It reads as follows:

The time is fast approaching, if not already here, when modern and improved structures will replace the sod hut, the log house, and the light, fragile building of the early settlers. Your Minister of Agriculture was very anxious that the merits of cement concrete structures should be thoroughly explained to you, as it would give you another class of buildings to choose from. That is the object of my being here, to explain as clearly as possible how these structures should be built. I will now try to do so as briefly and intelligently as I possibly can. I do not wish to inflict upon you a long, tedious address, but will just touch on the main facts. I would rather that our meeting should assume the form of a general discussion, as I will have many questions to ask you in reference to your materials and climatic influences. Whilst I am quite familiar with the work in Ontario, the conditions are different in your province, and during my address, if any statements are not clearly understood by my hearers, please stop me that I may explain any point more fully.

Now, gentlemen, it is probably due to you that I should say that I am a cement manufacturer, and that my address to-day will give you information in the use of all cements, that I do not wish to talk "shop" or my own business, and that I have no cement to sell to you, as we cannot supply the demand in our own province. There are in the neighborhood of from twenty to twenty-five different cements in the market. I believe they are all good, with the exception of two or three, when properly used.

The Portland cements, I believe, are all good. Sometimes some of those cements brought from the Old Country are damaged by being stored in damp places, and in many instances by being kept too long. I fully believe that our Canadian Portland cements are quite equal to the foreign brands. A most excellent Portland cement is the Sampson Brand, manufactured by the Owen Sound Cement Co. For all sorts of farm structures, our best brands of natural Rock cement are quite equal to any of the Portlands, and at about one-half the cost. The natural Rock cements set very much slower, but in the end I believe will out-wear any of the Portlands, when properly used. The natural Rock cement requires different treatment from the Portland, which I will try to explain.

It is absolutely a waste of time and money to attempt to build concrete structures of any kind, with fine, soft, or earthy sand or gravel. There can be no chemical action or crystallization when such material is used, and very fine sand, though clean, must be condemned as being wasteful. It takes too much cement. The ideal gravel is clean and coarse, say gravel from the size of wheat grains to that of walnuts, with a little sand through it. I wish you to understand this point particularly, and perhaps I can best illustrate it in this way. Take a piece of gravel as large as a walnut. All that piece of gravel requires in a concrete structure is the slightest coating of cement, and crystallization will take place. Now suppose that you should crush that same piece of gravel into a fine, almost dusty sand, and you will have a thousand little particles to unite. Just think how much surface you will have to cover, and each particle of sand, it matters not how small, must have a coating of cement or there will be no chemical action. I want to say here that a cement concrete made of the ideal gravel, such as I first described, will make stronger work—ten barrels of such gravel to one barrel of cement—than it would be possible to obtain from one barrel of cement to one barrel of sand. You will now see the importance of selecting proper material. To mix cement concrete a large platform should be laid of boards or planks, and the concrete mixed in the following way.

MIXING CONCRETE.

The usual proportions we use in Ontario for walls and lower concretes of our stable floors are generally six barrels

of gravel to one of cement, thoroughly mixed dry before putting in any water. Make a hole in the centre of the dry mixture, pour in a pail of water, take shovels and push a little of the dry mixture next the water into the centre until the water is nearly absorbed. Then pour in more water, and push in the material in the same way until it is all thoroughly moist. Now turn the concrete completely over twice, using shovels to do this and it is ready for use.

As to the depth of foundations required for the building, you know better than I what your climate requires, but our general practice in Ontario is to build the basement walls of barns from ten to twelve inches thick above the foundation footings. I consider a wall ten inches thick strong enough for any barn basement. If properly built you cannot put weight enough upon them to injure them in any way. Our foundations are prepared by excavating to a depth below the frost in clay sub-soils. Where we have sandy foundations we excavate to where the material is uniformly solid, in many cases not necessarily below the frost because we find the foundations are not disturbed by fretting in sandy soils. We usually dig the trenches eighteen inches wide and to the depth required, fill in these trenches by spreading over the bottom of the trench two or three inches of concrete, then, if they can be obtained, roll in large stone, hammer them down solid, fill in more concrete and small stone till the surface level is reached. Be careful to hammer the stone well into the concrete to make the foundation solid. I believe a firm foundation is the most important thing for all structures. Now build the walls above the footing foundation exactly in the centre of this footing. That will give you, if a ten-inch wall, a four-inch projection on each side of foundation. There are various ways of building walls; sometimes studding are set up all around the building inside and out to guide the plank, and sometimes nothing but inside and outside corners are used with bolts for the lower edge and wooden clamps for the upper edge of planks.

This is the most expeditious and economical plan when ordinary care by the builder is used. In the latter case for outside corners the best plan is to spike two planks together, say 6 inches or 8 inches wide, spiked together at right angles, just as you would the corner boards for a frame building. In the inside corner of these planks that form the triangle put in a levelled strip, made by ripping a 1½ inch square scantling diagonally. That will make levelled strips for two corners. Nail these in the inside angle, set up the triangular pieces at the outside corners. The inside of those triangular pieces, when set on end at the corners, will form the outside wall line. For the inside corners of the structure set up a 4 x 4 scantling in the inside angle: this will give you the wall line of two inside walls. When the planks are set up ready to build walls, wheel in the concrete, mixed as before described, spread it in between the planks about 3 inches thick. Place small field, or any other stone, in the centre of the walls, keeping them about 2 inches from the outside and inside planks. Hammer down firmly, then take a narrow mason's hammer, or an old axe will do very well, and ram the concrete firmly between the stone in the centre of the walls and the plank on each side. Walk on each side, and ram until the concrete is about 2 inches above the stones already placed. Keep repeating this operation until the walls are built all around the building to the top of the planks. When the planks are filled, commence to raise the planks that were filled first, and keep building on in this way until walls are completed. This is a rather hurried description of how walls should be built, but any Canadian manufacturer of cement who is anxious to sustain the reputation of his goods, and that his patrons may obtain the best work, will send a man who thoroughly understands concrete work, at his own expense, to educate people in every locality, where the work is not understood just how to do the different kinds of concrete work. I could show you how to do this work better in half a day than I can by telling to you for a week. There are little details which need at-

tion, and which can hardly be explained except by actual work. I will now talk to you for a few moments on the construction of floors.

CONSTRUCTION OF FLOORS.

First establish the grades of all parts of floors and where it is intended to put in our patent system of ventilation, locate the position of the walls which form the sides of the elevated feed alley. These walls are only four inches thick and extend from eight to twelve inches above the finished floor. We prefer the twelve inches, as that is high enough for the back of any feed manger for cattle. This system of ventilation consists in placing eight to twelve inch tile, according to the size of building, under the feed alley floor, and extending through walls, admitting the fresh air from the outside, with one inch iron lateral pipe leading from the tile mentioned to the parting blocks in feed manger in centre of each double stall, where the air is distributed in a full spray, in this way each pipe spraying pure fresh air to two animals. The air absolutely pure, is partially warmed in passing through the large pipe under feed alley, unfrozen ground. We find the temperature of this earth is about forty-nine or fifty degrees. After the little walls are formed for the elevation of feed alleys, put in foundation for manure drops (we find ideas differ as to the width and depth of manure drops, but they are usually from twelve to eighteen inches wide, and from four to ten inches deep). The bottom of the manure drop should be laid first, and this should be, say six inches wider than the finished drop, giving room to set on edge a plank, say 2 x 8 to form the face of each side of manure drop. Along the top of each plank nail a levelled strip to cut off the sharp edge or angle of the concrete on each side of the trench. The concrete behind these planks must be well rammed in, and soon as set the planks may be removed, leaving a smooth, well-finished trench. In building stable floors of all kinds, get grades all properly fixed, cover the ground if convenient, with one or more inches of sand or gravel, well rammed before putting down concrete, cover this with three inches of rough concrete, gauged six of gravel to one of cement. Ram this solid, and put on a finishing coat, one inch in thickness, of two parts clean, coarse, sharp sand to one part cement which is also firmly rammed. While the lower concrete is still soft the work can best be done, setting a 2 x 4 scantling on edge, commencing at one end of the building, about three feet from the wall, holding the scantling in place by two iron or wooden pins. Ram the rough concrete approximately level within an inch of the top of the scantling, then spread on fine concrete so that when thoroughly rammed it will be level with the top of scantling. Have the surface true to grade. When fine gravel can be obtained, these floors may be put on in one coat, three inches thick, mixed three parts gravel to one part cement, well hammered down and finished smooth and true to grade. It is absolutely necessary that an iron rammer (which we supply) should be used, so that all concrete, both upper and lower, is thoroughly rammed. Concrete for floors should not be mixed too wet, but should be only sufficiently moist to pack well and to work up to a good, smooth finish. In horse-stable floors the utmost care should be taken to have all concrete well rammed.

UNSANITARY STABLES.

I have described as well as time will permit how to put in floors. I cannot speak too strongly of the urgent need of some system of ventilation, because I am satisfied that our domestic animals cannot be healthy and grow without pure air. I have before me the report of the commission (of five practical and eminent men) appointed by the British Government, to find out, if possible, the cause of tuberculosis and other diseases of our domestic animals, and the bacteria germs in milk. Their investigation shows that these diseases do not exist amongst cattle which are not stabled. The report shows that in the dairy districts in Cheshire, where the cattle are stabled and kept warm in order to insure a large flow of milk, 63 per cent. of those

cattle were suffering, in a greater or less degree, from tuberculosis; whilst on a breeding establishment of Jersey cows in the south of England, which were not stabled, when the tuberculosis tests were applied to one hundred head there was not one single reaction. A very complete report was taken from data kept at one of the abattoirs in Glasgow, Scotland. The system of inspection there appears very thorough; not only were the lungs and intestines of the animal examined, but the large sinews along the back and down the front and hind quarters were laid open for inspection. It was also found that during the year thirteen hundred diseased animals were slaughtered. The whole number of diseased animals were cows, with the exception of less than fifty head, showing conclusively that ill-cleaned and poorly-ventilated stables are no doubt the cause of perpetuating this disease. In reading over the very lengthy report of this commission, I find that the most startling data comes from Dr. Hope, the Medical Inspector for the city of Liverpool, England. In 144 samples of milk taken from cows stabled in the city, 2.8 per cent. diseased germs were found, and in 44 samples that came into the city from the rural districts, 29.2 per cent. of diseased germs were found. Now the commission, in examining the different stables where those cows were kept, found that by city ordinance the stables for cows kept in the city were required to be cleaned out twice a day—not only cleaned, but thoroughly washed out with water, supplied (by means of hose taken in the stables) by the city water works. They also found that all cow-stable floors were made of cement or large, square tile, bedded in cement, so they were actually impervious to any stable taint. In the examination of farm stables in the rural districts they were mostly filthy and ill-ventilated. I believe it is simply impossible to obtain the best results from our domestic animals without pure air. Animals that are stabled all winter in ill-ventilated stables cannot thrive, and I have noticed on many occasions that where the cattle are turned out in the spring they are in a very unhealthy condition. I think that this matter of ventilating and the sanitary conditions of stables cannot have too much attention.

LOCATION OF STABLES.

Now, gentlemen, my address is longer than it should have been; no doubt you are becoming tired, but I would like to say a few words, before closing, on the location and plans of stable structures. Try to locate the stables so that you do not have to tramp through muddy lanes and filthy barn-yards, but rather that you can have access to your stables on good, dry land, gaining an entrance from some side or rear door if necessary. Spend some time in laying out the interior of your stables; you have to go to those stables to feed the stock at least one thousand times a year; why not have it as convenient as possible?

I have spent ten years of my past life aiding the farmers of the country in designing and laying out farm buildings, and I will gladly give my experience and assistance to you. If any person wishing to build will send me the number of stock he wishes to stable, and the size he would like his barns to be, I will send him a pencil sketch of the basement floor, without any charge, showing how best he may use the room at his disposal, and save as many steps as possible in feeding. If the building materials for concrete work are got ready during the winter, or any leisure time, it will require very little time and labor to put up the structures.

Before closing, let me give you the following important points: Mix thoroughly all concrete before using any water; all gravel and sand used must be coarse, and clean and free from earthy matter. Ramming doubles the strength of concrete: see that concrete wherever used is thoroughly rammed. No stone should come nearer than two inches to either face of walls. Do not attempt concrete work late in the autumn, unless you can cover so as to protect thoroughly.

Now, Mr. Editor, I hope I have not taken up too much space in your valuable columns.

ISAAC USHER.

Queenston, Jan. 10th, 1900.

The Agricultural Gazette

The Official Bulletin of the Dominion Cattle, Sheep, and Swine Breeders' Associations, and of the Farmers' Institute System of the Province of Ontario.

THE DOMINION CATTLE, SHEEP, AND SWINE BREEDERS' ASSOCIATIONS.

Annual Membership Fees:—Cattle Breeders', \$1; Sheep Breeders', \$1; Swine Breeders', \$3

BENEFITS OF MEMBERSHIP.

Each member receives a free copy of each publication issued by the Association to which he belongs, during the year in which he is a member. In the case of the Swine Breeders' Association this includes a copy of the Swine Record.

A member of the Swine Breeders' Association is allowed to register pigs at 50c. per head; non-members are charged \$1.00 per head.

A member of the Sheep Breeders' Association is allowed to register sheep at 50c. per head, while non-members are charged \$1.00.

The name and address of each member, and the stock he has for sale, are published once a month. Over 10,000 copies of this directory are mailed monthly. Copies are sent to each Agricultural College and each Experiment Station in Canada and the United States, also to prominent breeders and probable buyers resident in Canada, the United States and elsewhere.

A member of an Association will only be allowed to advertise stock corresponding to the Association to which he belongs; that is, to advertise cattle he must be a member of the Dominion Cattle Breeders' Association, to advertise sheep he must be a member of the Dominion Sheep Breeders' Association, and to advertise swine he must be a member of the Dominion Swine Breeders' Association.

The list of cattle, sheep, and swine for sale will be published in the third issue of each month. Members having stock for sale, in order that they may be included in the Gazette, are required to notify the undersigned by letter on or before the 5th of each month, of the number, breed, age, and sex of the animals. Should a member fail to do this his name will not appear in that issue. The data will be published in the most condensed form.

A. P. WESTGATE, Secretary.
Parliament Buildings, Toronto, Ont.

LIST OF STOCK FOR SALE.

DOMINION CATTLE BREEDERS' ASSOCIATION.

Shorthorns.

Bonycastle, F. & Son	Campbellford	Cows, heifers and heifer calves.
Brodie, G. A.	Hethesda	21 bulls, 7 to 20 months; 11 heifers, 7 to 21 months
Chapman, J. G. & Son	St. Thomas	Heifer, 2 years, bull 14 months; 8 bull calves, 1 to 10 months
Douglas, Jas.	Caledonia	Bulls, 9 to 15 months; young cows and heifers.
Graham, H. C.	Ailsa Craig	4 bulls.
Granger, Wm. & Son	Londesboro'	5 bulls, 6 to 13 months; bull, 5 years.
Sibbald, F. C.	Sutton West	2 yearling bulls, bull calf, 10 heifer calves, 5 yearling heifers, 20 cows.
Smith, A. W.	Maple Lodge	10 young bulls, 10 cows and heifers.

Polled Angus.

Kaufman, A. E.	Washington	Hull, 2 years; 3 bulls, 7 and 9 months, 3 heifers, 3 months
Sharp, Jas.	Rockside	3 bulls, 11, 12 and 15 months.
Stewart, W. R.	Lucasville	3 yearling bulls, 4 bull calves, 1 to 4 month females, all ages

Galloways.

McCrae, D.	Guelph	20 cows and heifers, 19 young bulls
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Ayrshires.

Guy, F. T.	Burmanville	5 bulls, 6 months to 2 years, 1 cow, heifers and calves.
Yull, J. & Sons	Carleton Place	Hull, 2 years, 6 bulls, 1 year; 10 bull calves, under 4 months; cows, 32 heifers, under 2 years, 10 heifer calves, under 4 months

Holsteins.

Richardson, M. & Son	Caledonia	3 bulls, 1 to 6 months, bull, 2 years.
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THE DOMINION SHEEP BREEDERS' ASSOCIATION.

Cotswolds.

Bonycastle, F. & Son	Campbellford	Ram and ewe lambs; breeding ewes.
McCrae, D.	Guelph	15 bearing ewes; 20 ram lambs.

Leicesters.

Smith, A. W.	Maple Lodge	10 young rams, 30 ewes and ewe lambs.
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Shropshires.

Yull, J. & Sons	Carleton Place	4 ram lambs, ewes, and ewe lambs.
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Dorset Horns.

Hunter, John	Wyoming	Ewes and rams.
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THE DOMINION SWINE BREEDERS' ASSOCIATION.

Berkshires.

Bonycastle, F. & Son	Campbellford	20 head, 5 weeks to 6 months.
McCrae, A.	Merrickville	Aged boar; 5 boars 2 months; 3 aged sows, 10 sows, 2 and 8 months.
McCrae, D.	Guelph	Young boar.
Yull, J. & Sons	Carleton Place	Boars and sows, all ages.

Tamworths.

Golding, H. & Son	Thamesford, Ont.	4 sows, 8 months; 25 boars and sows, 3 to 4 months.
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Chester Whites.

Golding, H. & Son	Thamesford	15 pigs, both sexes, 2 to 4 months.
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Report on the Sheep Carcasses from the Provincial Winter Fair.

As promised in a previous issue, we furnish the readers of THE GAZETTE this week with further information from the retailer's point of view as to the carcasses of the sheep killed in the block tests at the Provincial Fat Stock Show of 1899. It is in the form of a letter from Mr. Flavelle, of the Wm. Davies Co., and notes made by the foremen of the various branch establishments of the company in Toronto.

MR. FLAVELLE'S LETTER.

All the men in charge of our various retail depots express the same opinion, viz., that what lean there is in the mutton is of very great excellence. Several speak of some of their customers who are critical, and who have always found fault with Canadian mutton, stating in relation to this mutton that it resembles English stock more than anything they have ever received in Canada. Every foreman, however, advises that, owing to the excess of fat there is a very limited demand for it, and that what they are selling of it is very unprofitable, owing to the fat having to be trimmed off before the buyers will take it. The waste in this respect seems to run about one-third. One of the foremen advises that the president of our company purchased a saddle weighing 28½ lbs., but required 9 lbs. of fat to be trimmed off it. This, doubtless, proved very satisfactory eating, but you will easily see that this method of sale was very unprofitable to the retailer.

The general report furnished by our beef buyer, who is responsible for the fresh meats handled at our various depots, is as follows:

Cotswold.—A good fleshy sheep; does not carry too much suet, but fat on the back is too thick.

Leicester.—A little leaner sheep than the Cotswold; suet about right; reasonably fleshy.

Lincoln.—Fat too thick on the back; too heavy in suet; what flesh there is is good.

Horned Dorset.—A nice retail lamb, but hard to sell to the retail butcher because it is heavier in the front quarters than the other lambs.

Shropshire.—Makes a nice sheep in all parts, but the flesh wants to be of a better quality.

Southdown.—Cuts very thick and fat; an absence of flesh, but what there is is of exceedingly good quality; altogether too much suet.

Suffolk.—Very full of flesh, but not of so good a quality as the Southdown; does not carry too much suet.

THE FOREMEN'S REPORTS.

(1) "I might say in regard to the sheep purchased at the Provincial Fat Stock Show, that although the quality was A1, they would be very unprofitable for us to handle, being altogether too fat for our trade."

(2) "In reply to your letter asking for report on the prize mutton received. I would say that the public do not seem to appreciate it on account of the abundance of fat. The few who have tried it, speak in high praise of its quality."

"It is useless trying to sell it without trimming, fully 40 per cent. being fat. This brings the cost of the whole up to about 8c. a pound, buying price."

(3) "In regard to the show sheep received by us before Christmas, I beg to report that the quality was all that could be desired."

"We found, however, that it was hard to realize a reasonable price, and think that stock of this description would be unsuitable for this locality."

(4) "The sheep received by us, from London Fat Stock Show, we found much too fat to be of any use for our local trade. The public simply refused to buy at any price. The only way I was able to dispose of it was by cutting it upon the counter, after trimming 45 per cent. of fat from it. The breast and flank were only fit for the fat box, and there was altogether too small a proportion of lean meat for it even to be of any use for our retail trade in Parkdale."

Report on Dairy Department of Provincial Winter Fair, February, 1899.

By J. Stonehouse.

The Dairy Show held at London in connection with the Provincial Winter Fair has been the most interesting dairy test ever held in Canada from the fact that the world's record for a butter-producing cow has been broken and the standard raised a notch or two higher than it has ever been before and that by a cow which has entered the public arena for the first time.

The test this year discarded every side issue and the awards were made solely on the butter-fat and other solids in the milk, a few points only being given for time of lactation—20 points being allowed for each pound of fat, 4 points for each pound of solids not fat, and 1 point for every 10 days in milk, over 30 days, up to 10 points, and no cow was awarded a first prize which was not producing at the rate of 10 pounds of butter per week.

A RECORD-BREAKING HOLSTEIN.

Last year at Brantford the Holstein cow, Calamity Jane, owned by A. & G. Rice, made the wonderful record of 21½ pounds of butter per week by the

Chicago World's Fair standard of 80 per cent. butter-fat, but the Holstein cow, Aaltje Posch 4th, owned by Rettie Bros., Norwich, has made the phenomenal record of nearly 4¼ pounds of butter per day or 29.6 pounds per week according to the World's Fair standard; but, figuring it on a basis of 85 per cent. butter-fat, which is our Canadian standard, her record would be nearly 28 pounds per week, which, at the higher standard, leaves all other records in the shade.

As soon as it became known that a record breaker was in the show the dairy stables at once became the centre of attraction and the number of visitors who were constantly around the cow began to tell injuriously upon her before the test was over, and caused a shrinkage in both quantity and quality in her last milking. She was milked three times per day—5.30 a.m., 1.30 p.m., and 9.30 p.m. The first two milkings weighed 49 lbs. 6 ozs., and tested 4.5 per cent. fat,



Aaltje Posch 4th, the phenomenal milker and sweepstakes winner in the Dairy Department of the Provincial Winter Fair, 1899. Owned by Rettie Bros., Norwich, Ont.

the next three milkings 74 lbs. 2 ozs., testing 4.8 per cent. fat, and the last milking 23 lbs. 6 oz., testing 4.3 per cent. fat, making a total of 6.785 lbs. of butter-fat produced in 48 hours. This great record may be better understood when it is remembered that the average cow on the ordinary farm does not produce more than 4 lbs. of butter per week, or 130 lbs. per year, but here is a phenomenon which is as good as seven ordinary cows.

The same exhibitor had two other pure-bred cows and a heifer in the test, all of which are great milk producers. "Woodland Josco," over two months in milk, gave 127 lbs. of milk producing 4.3 lbs. of fat equal to 18½ lbs. of butter per week; Fanny F. 134 lbs. of milk with 3.4 lbs. of fat or 14 lbs. of butter per week and a heifer under three years making 14½ lbs. of butter per week.

Rettie Bros. won 1st, 2nd, and 3rd, on Holstein cow over three years old, \$45; 1st on heifer under three years, \$20; 1st and 3rd for Canadian Hol-

stein, special, \$35; 1st and 2nd for American Holstein special, \$40; 1st for grade cow, \$20; 1st for best three cows or heifers of one breed, a Melotte separator, \$100; and an extra special of a \$50 silver cup for best dairy cow on the ground.

OTHER BREEDS.

Jerseys, which are supposed to be pre-eminently butter cows, were very conspicuous by their absence, and why? The prizes were the same as in Holstein class except in the specials, yet there were thirteen Holsteins and only one Jersey. The Jersey Association has not heretofore given special prizes at the show as the Canadian and American Holstein Breeders' Associations have done for a number of years past. This may or may not have had something to do with the slim showing. Had this one Jersey been in better hands she would undoubtedly have made a better showing. Even though she had been carted in to the show

by waggon five miles on the day the test commenced and was put under the care of a stranger to be fed and milked, yet she gave at the rate of 16½ lbs. of butter per week, her highest test being seven per cent. butter fat.

The Shorthorns were well represented, there being twelve in this class and some of them made a very creditable record, the best giving 81 lbs. of milk with 3 lbs. of fat, equal to 12½ lbs. of butter per week.

The Ayrshires were represented by three cows owned by N. Dymont, Clappison's Corners. The 1st prize cow gave 81 lbs. milk with 3.4 lbs. fat, equal to 14 lbs. of butter per week.

There were four good grades, the lowest making at the rate of 15 lbs. of butter per week and the highest 16½ lbs. and here again Rettie Bros. stood at the head with a fine grade Holstein.

The Fat Stock Association took charge of the milk given by the cows during the show. The milk was run through a Melotte separator donated

by the Lister Co., of Montreal, as a special for the best three pure-bred cows; the separator was run by a gasoline engine donated by the Northey Manufacturing Co., Toronto, as a special for the best three heifers.

The skim-milk was disposed of on the ground, and, as there were no facilities for churning the cream, it was sent to the Dairy School, Guelph, to be made into butter. Prof. Dean kindly had it made up free of charge to the association. The proceeds were divided amongst the exhibitors, according to the amount of butter fat supplied by each.

A COMFORTABLE BUILDING INDISPENSABLE.

While the dairy test is growing in favor it is not what it should be, considering the importance that is attached to it. It is, like all the rest of the show, an educator of the most practical kind, and should act as a stimulant to all who are engaged in the dairy business.

Two of the classes were very well

Why could not prizes be given for dairy products in connection with this show? It would interest another class and add to the interest of the whole show.

FARM HELP EXCHANGE.

The Farm Help Exchange has been started with the object of bringing together employers of farm and domestic labor and the employees. Any person wishing to obtain a position on a farm or dairy, or any person wishing to employ help for farm or dairy, is requested to forward his or her name and full particulars to A. P. Westervelt, Secretary, Live Stock Associations. In the case of persons wishing to employ help, the following should be given: particulars as to the kind of work to be done, probable length of engagement, wages, etc. In the case of persons wishing employment, the following should be given: experience and references, age, particular department of farm work in which a position is desired, wages expected, and where last employed.

These names when received together with particulars will be published F.R.E. in the two following issues of the "Agricultural Gazette" and will afterwards be kept on file. Upon a request being received the particulars only will be published, the names being kept on file.

Every effort will be made to give all possible assistance, to the end that suitable workers, male or female, may be obtained. Every unemployed person wishing to engage in farm or dairy work is invited to take advantage of this opportunity.

Help Wanted.

Two first-class dairy farm hands required for farm in the West. Must be

or single man by the year. No. 267. a

Two reliable farm managers wanted for farms of 50 acres a piece. Permanent positions to right men. Terms of engagement either (1) manager to furnish half of implements, stock and running expenses, and receive half of profits, or (2) manager to furnish all implements, stock and running expenses, and receive two-thirds of the profits. No. 268. a

Wanted, man to work on a market garden in the Northwest Territories, and help with stock. Single man preferred. No. 269. a

Required, young man of good character to work on a 200 acre farm. Would engage by the year, if desired. No. 270. a

Married man wanted about end of March for farm near Goderich. Permanent situation to good man. No. 271. a

Wanted, married and single man for 200 acre farm, where cattle, sheep and swine are fed extensively. Married man would receive \$225 to \$250 a year, with house and $\frac{1}{2}$ acre of land and board himself; single man would get \$120 to \$160 and board, according to capabilities. Both must be thoroughly experienced and hard workers. No. 272. a

Married man required for farm in Essex Co., near Lake Erie. Must have no bad habits, be good at general farm work, and handy with horses. Wages \$180 per year, good house, garden and wood. No. 273. a

Wanted, on 400 acre farm, farm foreman to take charge of men. Also wanted on March 1st, married man to superintend the dairy department. Dairy consists of 30 to 35 cows. A few reliable laborers can also find employment as general farm hands. No. 274. a

Good, all-round farm hand required at once. No. 275. a

Wanted, man and wife for small dairy farm, where 20 cows are kept. Free house, vegetables, milk and summer wood provided. Also man and wife required. Must be experienced in farm work. Free house and garden and liberal wages to suitable couple. No. 276. a

Wanted, at once in by the year to work on a farm in North-west territories, must be of good moral character, able to milk, and do all kinds of farm work. Wages \$175 a year, with board and washing. No. 277. a

Married couple wanted, without family. Must be strictly honest. Man to act as farm foreman; woman to keep house for one or two hands, when required. Steady position for suitable pair. Salary \$25 a month to commence with. Furnished house



Calamity Jane, sweepstakes winner in the milk test at the Provincial Winter Fair, 1898. Owned by A. & G. Rice, Curries, Ont.

represented, but the others were very slim, and, no doubt, there is a reason for this. Those having extra good cows generally give them the best of care, and, unless an exhibitor is certain of comfortable quarters for his animals, he will be indifferent about letting his cows go at this season of the year. While the people of London may have done their best, under the circumstances, to provide comfort and accommodation for the show, the result brings out the fact very plainly that, if the show were permanently located, a good building could be provided with proper facilities for heating as required.

Special arrangements should be made for the dairy cows, as they require more warmth than any other class of stock if they are to do their best at the pail.

good milkers, and also handy with teams. Good accommodation given. Wages \$200 per year to good men. No. 264. a

Wanted, strong, steady young man for a fruit farm in the Niagara district. Preference given to one used to stock. Wages \$10.00 a month and board. A second hand kept. No. 265. a

Young man required to work among cattle and other live stock this winter. Must be good milker and have a liking for stock. Wages \$10.00 a month and board to start with, and will be increased according to capabilities. No. 266. a

Wanted, experienced herdsman to take charge of a large herd of Short-horns. Good wages will be given to a first-class man. Will engage married

and all provisions supplied. Work in winter feeding stock. Farm near Fort William, Ont. No. 278. a

Wanted, man and wife, no children, to live with employer. Man must understand general farming; one with an extensive knowledge of poultry raising preferred. Wife to do cooking and laundry work in small family. Second girl kept. Give references and state wages. No. 258. b

Married or middle-aged single man required in March on a stock farm. Winter work to feed live stock. Must have a good knowledge of farm work. No. 259. b

DOMESTIC HELP WANTED.

Wanted, capable woman for general housework, and girl as housemaid in small family. Mother and daughter, or two sisters preferred. Must be trustworthy. Good wages paid. References required. Also wanted trusty woman as laundress and housekeeper's assistant. Wages \$100 a year. References required. No. 279. a

Wanted, mother's help, to live on a farm, good home and pleasant and convenient neighborhood. No. 280. a

Situations Wanted.

By young man of 18 as general farm hand. Best of references. Strictly temperate. Wages \$16 a month, board and washing. References required. No. 281. a

Position as foreman on stock or dairy farm wanted where horse is supplied. Applicant, 21 years of age, with no family, is thoroughly acquainted with care of live stock and use of farm implements. Has also had experience with running cream separator. No bad habits. No. 282. a

Young man, 18 years old, wishes position on a farm as general farm hand. Understands farm work. Wages \$11 a month and travelling expenses. No. 283. a

Married man, 39 years of age, with six children, thoroughly conversant with all farm work, handy with tools and first-class ploughman (having won several sweepstakes prizes for ploughing), desires situation on a farm. Wages \$25 a month. No. 284. a

Wanted position on stock farm by veterinary surgeon (honor graduate). Young man and not afraid of work. Good salary expected. No. 285. a

Married man, aged 30, wishes a position on a cattle ranch or as a stockman in the Northwest or Manitoba. Would engage for a year. Wife would act as housekeeper if required. Good references. No. 260. b

Capable boy of 16, raised on a farm and who has also had some experience in mason work, desires a yearly engagement on a farm. No. 261. b

Position of farm foreman required by young man who has taken a course at the O.A.C., Guelph, and managed a farm for some time. No. 262. b

DOMESTIC HELP.

Wanted by widow, situation as housekeeper on a farm, where there is no objection to her daughter, aged 11 years, being with her. Must be reasonably near to a school. Excellent references. No. 263. b

N.B.—Where no name is mentioned in the advertisement apply to A. P. Westervelt, Parliament Buildings, Toronto, giving number of advertisement.

Horse-Breeding.

By Prof. J. Hugo Reed, V.S., Guelph, Ont.

(Continued from last issue.)

Intra-uterine Influence.—The abnormal peculiarities sometimes observed in animals at the time of birth, that are not recognized as family characteristics, have been popularly attributed to some mysterious influences of the imagination of the mother in the process of intra-uterine development. Some claim that this law is noticed even in fowls. It is stated that the ambition, courage, and military skill of Napoleon Bonaparte had their foundation in the fact that the Emperor's mother followed her husband in his campaigns, and was subjected to all the dangers of a military life, while on the other hand the murder of David Rizzio in the presence of Queen Mary was the deathblow to the personal courage of James I, and occasioned that strong dislike of edged weapons for which that monarch was said to be remarkable. Various instances can be cited of deformities, monstrosities, and birth marks in the human family traceable to frights, etc., received by the mother during pregnancy. The same law acts, but not to so marked an extent, in the lower animals. I call to mind one well-marked case of the effect of a fright received by a mare during the act of copulation. A farmer bred a half-bred Clydesdale mare to a purebred Clydesdale stallion. Both sire and dam were good individuals, with full manes and tails. This farmer owned a dog with a very short tail, and he had the habit of interfering with any of the stock that were fighting. The stallion came to the farm to serve the mare, and during the act of copulation the dog, evidently thinking his services as a peace-maker were in demand, caught the stallion by the tail, and growled and swung from side to side. The groom ran back and gave the dog a kick, and he ran towards the barn, passing directly in front of the mare. The mare produced to this cover, and the foal, while perfect in form, had

only a few hairs and no dock where the tail should be. This animal is still owned by the breeder. I saw her a few months ago, and she is a fair representative of her class, being well developed in all points except the above. I cannot explain this phenomena in any way except that the mare was startled by the sudden appearance of the tailless dog, and it caused such a nervous impression as to cause the development of a fetus with the same peculiarity.

Sex at Will.—Various theories have been advanced in order to produce sex at will, but as far as I can learn all have failed in actual practice.

If we recognize the foregoing laws as governing factors in the reproduction of horses it teaches us that too great care cannot be exercised in the selection of animals for breeding purposes, and also that great care of the dam during pregnancy is demanded. As to the hygiene of pregnant mares, it does not differ in many respects from that of other animals. The mare should be kept in moderate condition, and be given regular exercise during pregnancy, or else regularly used at ordinary work. She should not be subjected to excessive muscular exertion, and should not be worked much under saddle, and, if ridden at all, spurs should not be used, as the excessive muscular contraction often caused by the application of the spur is liable to cause abortion. If we are breeding with the hopes of producing speed, I think it well to speed the mare for short distances at whatever gait we expect to produce, as I think the offspring inherits to a certain extent the habits of the dam, especially those exercised during the period of gestation, but she should on no account be speeded for sufficient distances to produce fatigue. The food and water should be of the very best quality, the food easily digested, and given in reasonable quantities. The premises in which she is kept during cold weather should be roomy, thoroughly clean, and well ventilated. All undue nervous excitement should be avoided, also the access of all nauseous odors, and all operations that necessitate the casting of the animal or the drawing of blood. The administration of drastic purgatives should also be avoided if possible, as all of these have a tendency to produce abortion. When the time of parturition approaches she should be carefully watched, and, if necessary, skilled assistance called in. As before mentioned, the prospective breeder should carefully consider the class of animal he will endeavor to produce, and, having decided that point, he should provide himself with one or more mares of that class, of the best quality his means will allow. Unless he can provide a mare or mares of at least fair quality he had better not breed at all, as the results will surely be disappointing from the reasons already stated. I do

not consider it necessary to secure pure-bred mares, of course it will be all the better if such can be got, but the price of good pure-breds is beyond the means of the ordinary breeder. Having secured the dams for our prospective stock, the next point is to select a sire. Unfortunately there are many owners of stallions who think it is the duty of their friends to patronize them. This is altogether a mistake. The breeding of horses, is a business matter, and must be considered purely from a business standpoint in order to make it a success, and the man who breeds his mare to an unsuitable stallion, simply because he is owned by a friend, not only is doing himself an injustice, but his friend an injury. The result will, with very few exceptions, be the production of a nondescript, and as a stallion's value in a community is determined largely by the quality of his stock, the production of a colt of this kind will injure his reputation to a much greater extent than can be compensated by the stud fee received. A breeder must carefully study his mare in regard to conformation, temper and general peculiarities, and remembering the law that "like begets like," select a sire that should be suitable. If the mare be deficient in some particular point select a stallion that is well-developed in that point; if she have hyper-development of any point see, if possible, that the sire is rather deficient there; if she be of hypoviscous disposition, select a phlegmatic sire, and vice versa. In all cases be careful to ascertain that both parents are not affected with any disease the predisposition to which will probably be transmitted to the progeny. Diseases or malformations that can be traced directly to injuries, of course, are not transmissible. Undesirable traits of disposition, as viciousness, stubbornness, etc., are as much to be avoided in breeding animals as disease. The classes of horses that at the present time are in demand at fair prices are: Heavy draft, carriage, saddle horses and hunters, and good, strong, clever roadsters. Other classes that cannot be produced by any special line of breeding are good chunks of 1,300 to 1,400 lbs. and cobs with extreme action.

In selecting stallions to sire any of these classes out of the mares at our disposal we should insist upon both individuality and pedigree. The time when pedigree alone was considered is fortunately past. A horse with a good pedigree, but poor individuality a poor or inferior animal of his class, is, of course, not a suitable animal for sire. Get both if we can, but I would sooner sacrifice pedigree than individuality. In mentioning the classes of horses that the farmer can produce I have purposely omitted race horses. I do not consider it is the province of the ordinary farmer to try to produce horses to race at any gait. The percentage of horses produced that are

fast enough to win money at any gait on the race track is very low, and if a farmer of ordinary means should produce one it will cost him a great deal to develop his speed. My observation has been that the farmer who has attempted this has generally ruined himself financially unless he has sense enough to see how things were going and given it up before he has spent his all in trying to produce a world beater. Therefore, I say, leave the production of race horses in the hands of the millionaire, and endeavor to produce an animal that has a fair value at four or five years old without much development or handling. Let the dealer educate the horse for the city market. Of course this applies to the lighter classes of horses that require a considerable amount of education to fetch the fancy prices occasionally paid. If the farmer has time and experience in such matters it will probably pay him to put the finished article on the market; but as a rule it pays him to sell the young horse in the green state to the dealer for a reasonable price and let him take the trouble and chances of giving him manners and action and selling him for a fancy price, provided, of course, he develops into a superior animal. The light classes of horses, as carriage horses, cobs, saddlers and hunters require good manners and willingness and ability to perform cleverly the functions peculiar to the class before they can be put upon the market as a finished product. The education of such horses is, we may say, a business by itself, and the farmer who attempts it, even though he may be very capable and competent, must of necessity neglect his general farm operations, therefore we contend that he should, as a rule, sell his horses partially green. Of course it pays to have the horse tolerably handy in harness or saddle in order to be able to show the prospective purchaser that he is capable of developing, with proper handling, into a good specimen of his class. It is a mistake to let a colt remain entirely unhandled until four or five years old and then offer him for sale in that condition. The average dealer will not buy a perfectly green one, as it is generally a hard and dangerous task to handle a big four or five year-old colt that has never been accustomed to restraint of any kind, and a horse that will drive in single or double harness, or carry a man on his back, what we might call a partially educated fellow, is worth a great deal more money than the same animal perfectly green. Draft horses, weighing from 1,400 to 1,700 lbs., are produced by breeding good mares of this class to a sire of any of the recognized breeds of draft horses, but especially to the Clydesdale or Shire. Percherons and Suffolk Punches have not proved profitable sires in this country, but the two former classes have proved very successful, and they are so much alike it is not necessary to go minutely into the

distinguishing characteristics. The Clydesdale is probably the most popular and certainly the most plentiful, but it is rather hard to say why it is so. Many claim that the draft colt can be reared with much less risk and with less liability to accident and disease than the lighter classes. This can probably be explained from the fact that the colt of this breeding is naturally a quieter and more settled animal than those of lighter breeds and hotter blood, and consequently less liable to injure himself from exuberance of spirit while in the pasture field or paddock. And then again, small hunches, or blemishes, are not considered of as much consequence, nor can they be as easily seen, especially on the limbs, on account of the amount of coarse hair, on a heavy colt as on a light animal. If we decide to breed heavy horses we should decide what particular breed we will produce, and then stick to that breed. If disappointed in the first production, do not get discouraged and try another breed; probably it would be well to try another sire of the same breed, as there may be some reason why the first sire did not nick well with our mare; but stick to the original selection of breeds, and if we use ordinary intelligence success is bound to attend us.

In the selection of a sire for any class of horses it is well, if possible, to drive around in the section in which he has stood in previous years and view his stock. It is sometimes the case that a stallion whose appearance and pedigree lead us to the conclusion that he should be a good sire is disappointing, and on the other hand an animal apparently not so good will prove valuable in the stud. In viewing the product of a stallion we must, of course, note carefully the mares out of which the colts have been produced.

(To be continued)

Mendicant—Oh, sir, you don't know what it is to want bread?

Mr. Vounghusband—I don't, hey? I'd have you understand that my wife has been attending the cooking school, and I've lived for six weeks on angel's food, prune whip, charlotte russe and Spanish cream. I not only want bread, but I want doughnuts and apple pie.

This is a baby. It is a girl baby. How choppy its chin is! How red its eyes! What horrid contortions it makes with its face! See how savagely it kicks! How like a demon it yells! Yet in a few short years some man will be half-crazed with wild suspense, worshipping the very air this being breathes, devoutly kneeling at her feet, and frantically begging for one word, one pressure of the hand, even a look which will give him hope.—*Pittsburg Bulletin.*

Farm Implement News

Information Wanted.

STEAM DREDGE OR SHOVEL FOR DITCHING.

To the Editor of FARMING:

The illustrated farm implement feature of your paper deserves the highest commendation. If you have not already arranged for the publishing an illustration of a steam dredge or steam shovel suitable for ditching low or marsh land, I wish you would do so, and think other farmers would also be benefited by it. Some of the best land for grass is meadow-land that is now too wet and sour to produce anything more than the most inferior feed, but, if drained, would produce abundance of the best kinds of hay, but hand draining is so expensive that it prohibits the work being done. One good steam shovel or dredge in a neighborhood might be of great use and profit. Please give us an illustration of the best implement for this kind of work.

Very truly yours,
ELI E. JOSSELYN, M.D.
Philadelphia, Dec. 13, '99.

WATERWHEELS AND WATER POWER.

To the Editor of FARMING:

While you are writing up farm machinery, there is one subject which I think would be of interest to very many in this section. In this valley we have hundreds of streams, and nearly all run past farm buildings. I made a waterwheel and all fixings and ran a cutting-box, grain crusher, pulper, etc. When in your city I called at Jones & Moore, 20-22 Adelaide street west, to learn the price of dynamos. I found that from 10 to 20 lights only require about one horsepower, and the cost is from \$40 to \$50. Perhaps something along this line would be of service to farmers.

J. I. GRAHAM.
Vandeleur, Ont., Dec. 18, '99.

The information asked by our correspondents, though of value in special districts mainly, would be of interest generally to our readers. We shall endeavor to supply this information as soon as a favorable opportunity occurs. In the meantime, we would be glad to hear from anyone who has anything to offer along these lines, or upon any other topic. This department can only be made of the greatest value by farmers co-operating with us and making known the particular lines they would like information upon.

Farmers' Repair Outfit.

With the advent of more complicated and a larger number of machines and implements for use on the farm there must necessarily follow a larger

amount of breakages than was the case ten or fifteen years ago. We do not mean by this that modern and up-to-date farm machinery is more breakable than it was a decade ago, but that with the largely increased number and variety of machines used on the farm, the repairing department assumes added importance and becomes a branch of the farm work in which a large amount of time and money may be lost unless the farmer is able to help himself and do a large share of the repairing at home. For this reason we believe it would be a good investment for every farmer to have a good repairing kit and a small tool shop where the smaller repairs can be attended to without having to spend half a day running to the village or town to get them done.

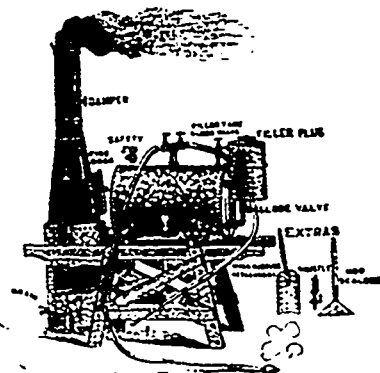
By having some arrangement of this kind and by giving a little attention to the mechanical side of farm work a great deal of time and money would be saved at the busiest season of the year. It does not require much skill to put in a new bolt or rivet when required, and by having this attended to at the proper time a bigger breakage will be saved later on. Then there are many of the wooden parts of implements which only require a little mechanical skill and the necessary tools to replace when broken. To have to take these to the nearest machine or carpenter shop when broken means wasting a lot of valuable time and paying several times more for the work than it would cost to have the repairs made at home.

In a small farm machine shop where the necessary tools should be kept could be erected at comparatively small expense a small forge. With this arrangement iron breakages of a simple kind could be mended at little expense, and a thousand and one little things fixed up about the farm in the way of gate and door hinges, latches, etc., that in a year's time would mean a great saving of money. We hope before long to give a fuller description of what would constitute a good repair outfit for use on an average farm. In the meantime we would be pleased to have the views of any of our readers on this important subject.

Perhaps some farmer will say, "I have no mechanical skill, and if I did invest in a proper repair outfit I would not be able to use the tools." While there may be a few exceptions of this kind, yet we are inclined to the view that someone can be found on nearly every farm who would soon become an adept at such work in a short while if given a chance. The repair work would be a good line for one of the boys on the farm to take up, and if necessary a little time during the winter might be spent at some machine shop in becoming familiar with the tools and how to use them.

A New Feed Cooker.

In our last farm implement department issued on Dec. 19th last, Mr. J. A. Macdonald, of Hermanville, P.E.I., gave a description of a new feed cooker which he is using. This cooker is known as the Reliable Feed Cooker, and is highly recommended by those who have used it. It is said to be a wonderful help to the women folk in the way of providing abundance of hot water on wash days. It will heat

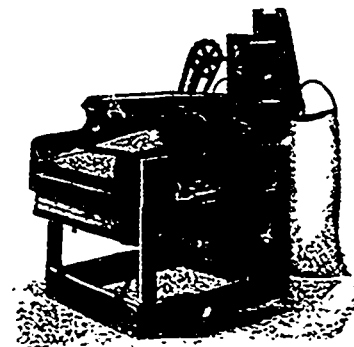


a barrel of water hot enough to scald hogs in 20 minutes; will cook a barrel of ground feed in 30 minutes and 25 bushels of ground corn in 2 hours. It is simple in construction and its safety valve, water gauge and checkvalve render it free from liability to explosion. The accompanying illustration will give the reader a clear understanding of its construction and by referring to the description given in the last farm machinery number, an intimate knowledge of what it will do may be obtained.

Grain and Seed Cleaning and Grading.

By T. H. Cooper, Toronto.

It is a lamentable fact that a very large number of our most thrifty and industrious farmers sadly neglect to see that the grain and seed which they sow is not properly cleaned from all



foul and obnoxious weed seeds; not only cleaned, but graded, so as to get nothing but the large, plump grains for sowing. It has been proved by actual test scores of times, by the ex-

perimental departments connected with our Government experimental farms, that the large, plump grains will produce much better results under the same conditions than the inferior cleaned and graded grain so much used for seed purposes. The farmer is not altogether to blame for the dirty condition of so many of the farms, for unless he hand-picked the grain it would be impossible for him to procure the sample of seed above referred to. This may account to a large extent for so much imperfect seed being sown.

The fact is that if the farmer had proper and efficient grain and seed cleaners and graders that were capable, and had facilities for removing all foul seeds and grading the grain properly, there would very soon be a marked change in the appearance of the fields when the crops are growing, and a change, too, in the sample of the grain when threshed. A full, plump sample would take the place of a mixed crop of grain, wild tares, mustard, cockle, redroot, and all the other contaminating and abominable trash which is so troublesome to the agriculturist, and which robs the grain of nourishment.

Not only is it to the advantage of the farmer to use pure, clean, plump grain for seed, but it is also profitable to prepare his grain (especially wheat) for market, as the price is governed by weight. Most wheat will weigh 60 lbs. to the bushel if properly cleaned, and other grain (barley, oats, etc.) command a higher price if the buyer finds that it is cleaned up to the required standard. The same also applies to beans and peas. It is advisable for the farmer to be as careful in the selection of the latest and best up-to-date grain and seed cleaner and grader as he would be in the choice of any other implement, perhaps in this case even more so. Be careful to sow nothing but pure seed, remembering "that which a man sows he shall also reap."

More About the Blower Elevator, Ensilage and Feed Cutter.

By D. Thom, Watford, Ont.

You have already had quite a number of letters on the above subject, and I have reason to believe that your readers are sufficiently interested to have some further information. I claim to be the first to adapt this style of machine to the successful elevating of ensilage, our first efforts dating back to '93. If any of your readers have personal knowledge of any successful silo filler prior to that date, then if upon sufficient investigation we find their claim well founded they can take their true place.

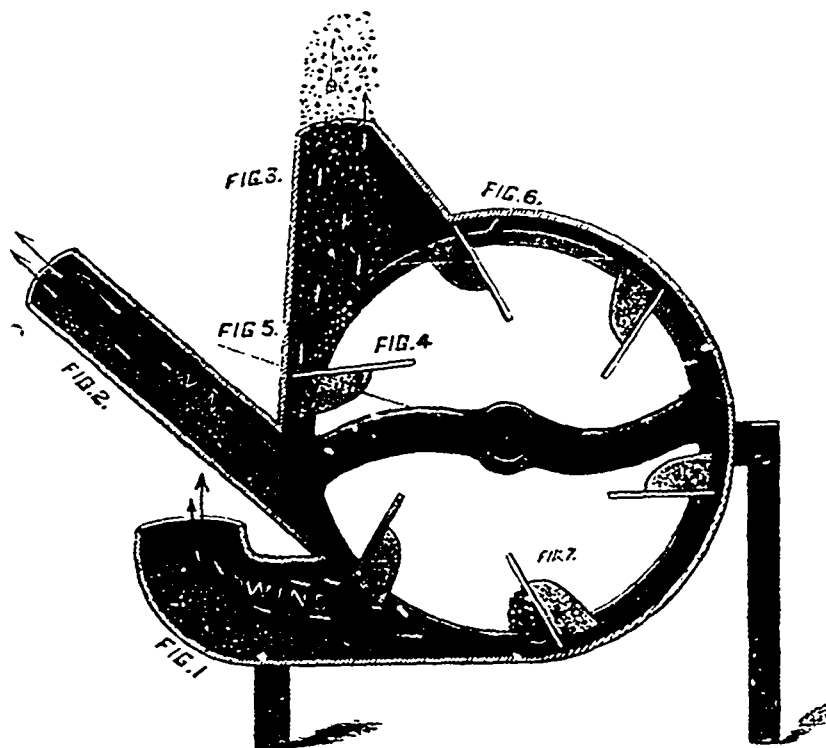
This machine seems to have baffled the mechanical mind to grasp the true construction. The fact that the name *blower* has been so freely applied to this style of machine has led

to the belief that it was a *blower* simply and the machine that could generate the most wind would take first place, and so nearly all the manufacturers in Canada have burned their fingers, and had their pocket-books considerably disturbed before they discovered that our success was due to something else. Now they have had their experience, and many farmers can testify to some bitter experience, for it is generally the case that a good deal of experimenting is done at the expense of the farmer.

Let me now give your readers a pointer well worthy of remembering. Put it down as a rule that it takes from one to three years for the best of our manufacturers to get their patterns and boring jigs done to accuracy, so that there are certain defects that give rise to many of the breakages due to defective construction. This is a fact

that case you would call it a *thrower*, not a *blower*. It will therefore be seen at fig. 1, the return elbow destroys the throw force, and at fig. 2 the green ensilage naturally falls to the bottom of the pipe; wind naturally rises and so you see the result, wind passes over this. Briefly there lies the underlying principle, and if we had made these facts public years ago it would have saved some manufacturers thousands of dollars and also would have been a saving to a number of farmers.

Now, regarding power required to successfully run this class of machinery there is considerable diversity of opinion, a good many claiming that they can only be operated by a 12 or 14 horse-power steam engine. Some of our readers will be surprised to know that our machines have been successfully run by 2 horse tread powers and 3 and 4



that no experienced manufacturer will care to dispute and few farmers are fully aware of. The principle, needless to say, applies to all kinds of machinery, farm or factory, but it is the intention of this article to deal with feed cutters of the Blower Elevator type. That the principle can be more readily understood, I refer your readers to the accompanying cut, setting forth the three styles of delivery. There is also the independent *fan* style not shown. We claim that ensilage can only be elevated by the principle as shown at Fig. 3, a fan blower and a centrifugal *thrower*.

As we have already mentioned it has become customary to use the term *blower*, when at the same time if there was no wind action or force the centrifugal throwing force of the fans would throw the cut feed 20 feet. In

horse-power, gasoline or gas engine filling silos 20 to 25 feet in height. For example, we have just received a letter setting forth one customer's experience. He had tried a certain make of Blower Elevator machine, evidently of a defective principle, where it took a 12 horse-power engine to drive it. He states after a trial of one of our make that if 3 of our machines were run from one shaft he could operate the 3 easier than the one referred to, so that there is a vast difference in the power required. What I wish most particularly to emphasize is that our Blower Elevator machines are adapted to any kind of farm power, generally from 2 to 12 horse-power.

In support of this we hold a large number of testimonials from prominent farmers.

How I Heat Four Rooms with One Stove.

By J. A. Macdonald, Hermanville, P.E.I.

It is seldom that four rooms are heated by one stove. Yet I have been able, by exercising a little ingenuity and purchasing a Rochester radiator,

inches from the floor, right over the pipe coming up from parlor below. From the top of radiator—it is about 34 inches high and 12 inches in diameter, and contains 96 cross tubes—the pipe connects, and from thence passes into flue. Just over the dining-room stove a hole is cut in the ceiling about eighteen inches square, in which is



Residence of J. A. Macdonald, Hermanville P.E.I.

to heat four rooms—the dining-room and parlor, and the two bed-rooms immediately above them—with one stove. The plan has been a complete success, and for the benefit of the readers of FARMING I give a short illustrated description of how it is done. The saving of fuel, not excepting the trouble and attention in having but one stove to look to, is quite an item.

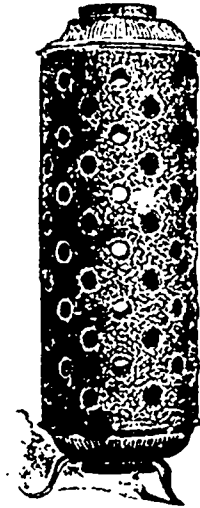
In the first place, I moved the cook stove from the kitchen into the dining-room, and instead of running the pipe into the flue, ran it through the wall just above the upper casing of the sliding doors that connect dining-room and parlor. The parlor gets most of its heat from the dining-room stove; the small portion of the pipe running through the room helps. The pipe passing through the parlor turns up, about two feet from the wall, through the ceiling into the bed-room immediately over the parlor. Here the pipe connects with the radiator (a cut of which I give). The radiator—the Rochester radiator—answers the purpose of a small stove, and has every bit as much heating power, without the trouble and expense of supplying fuel. The radiator sits on legs about six

fitted a register grate. The stove in dining-room, of course, heats that room and also the parlor adjoining, as when sliding doors are open it is almost one room, the stove being set within two feet of rear sliding door. The bed-room just above dining-room gets its heat through register from stove

Cream Separators.

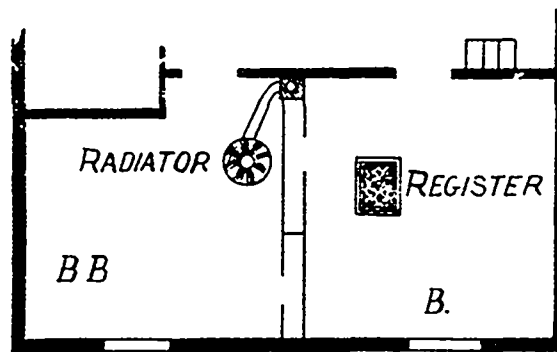
By J. W. Hart, Supt. Kingston Dairy School.

In the manufacture of butter, economically from milk, the cream separa-



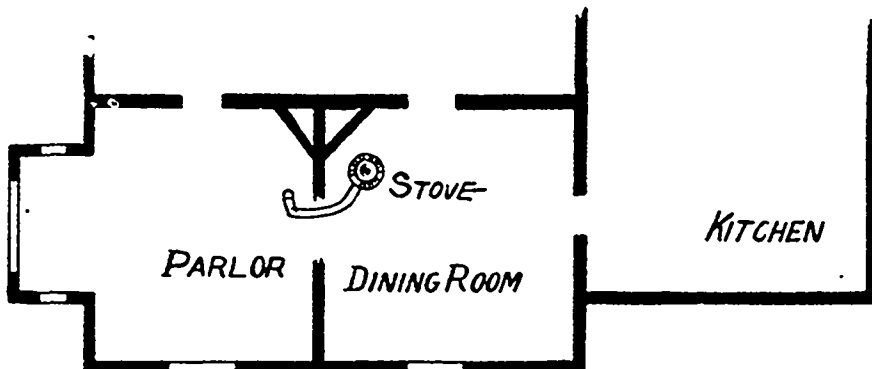
Radiator used by J. A. Macdonald.

tor is now regarded as an absolute necessity. When compared with gravity creaming under the best conditions we can, by the aid of the separator and with less labor, make from 15 to 25 per cent. more butter which will sell for a higher price, while the skim-milk is left in a better condi-



Upper rooms—BB heated by radiator, B heated by register.

below; the warm air is always at the ceiling, being always 30° warmer than at floor. So that it will be seen, more particularly from the drawings I have made, just exactly how the thing is done—how four rooms are heated with one stove.

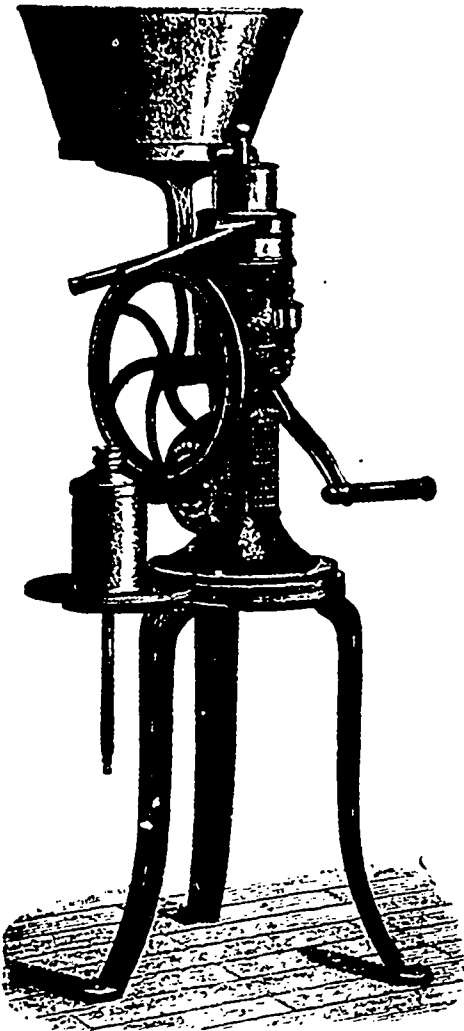


Floor plan, Macdonald's house, lower rooms, heated by stove.

tion for feeding to the calves, the hope and foundation of the dairy of the future.

In setting milk for the cream to rise, the force of gravity forces the heavier part of the milk to the bottom of the vessel, while the cream, being lighter, rises more or less perfectly to the surface. The simple force of gravity is greatly intensified when to it is added centrifugal force, which accelerates the separation of the cream to such an extent and perfection that all but its complete removal may be effected almost instantaneously.

The essential parts, those common to all centrifugal separators, may be enumerated as follows: A forged steel bowl, cylindrical in shape, capable of withstanding the enormous centrifugal force engendered by its rapidly revolving motion, and fitted with some device to impart the revolving motion



National Cream Separator, hand power.

to the milk entering the bowl; an inlet tube through which the milk is allowed to run into the bowl; an out let or outlets leading from the largest circumference of the bowl, with sufficient capacity to allow the skim-milk to escape nearly as fast as it enters the bowl; an out-let nearer the centre, through which the balance of the bowl contents (the cream) may escape, and the gearing necessary for revolving the bowl.

In selecting a centrifugal separator (hand or power) the following points should be considered: First, effectiveness of skimming, best judged by testing the skim-milk in the special skim milk test-bottle where it should not show over .10 of one per cent. fat. 2nd. Durability and simplicity of construction. 3rd. Power required to operate it. 4th. Safety. 5th. Capacity; the cream separator in the private dairy should be large enough to handle a single milking from the herd within an hour. In the factory there should be sufficient separator capacity so that all the milk may be separated in three or four hours' run. In any case the machine should skim clean up to its advertised capacity. 6th. Cost, the question of first cost is not of great importance when compared with any of the preceding points. What some might consider a slight loss of fat in skimming, would soon pay the increas-

ed cost of an efficient machine 7th. A separator should not be bought except from a responsible party who will give a written guarantee, covering the capacity, efficiency and freedom from defects, from faulty workmanship and material.

The competition among manufacturers is keen and the prices of separators are being reduced, while their efficiency is being increased. The choice of a machine is somewhat puzzling to the average layman. The high efficiency of the various kinds of separators sold in Canada leaves little to be desired. Naturally some will put more stress on some one of the points enumerated than on others, and there is sufficient variety so that the tastes of all users may be suited. Separators are now on the "free list," so that our dairymen can have the finest machines on the Old Country and American markets, as well as those made in Canada, to choose from.

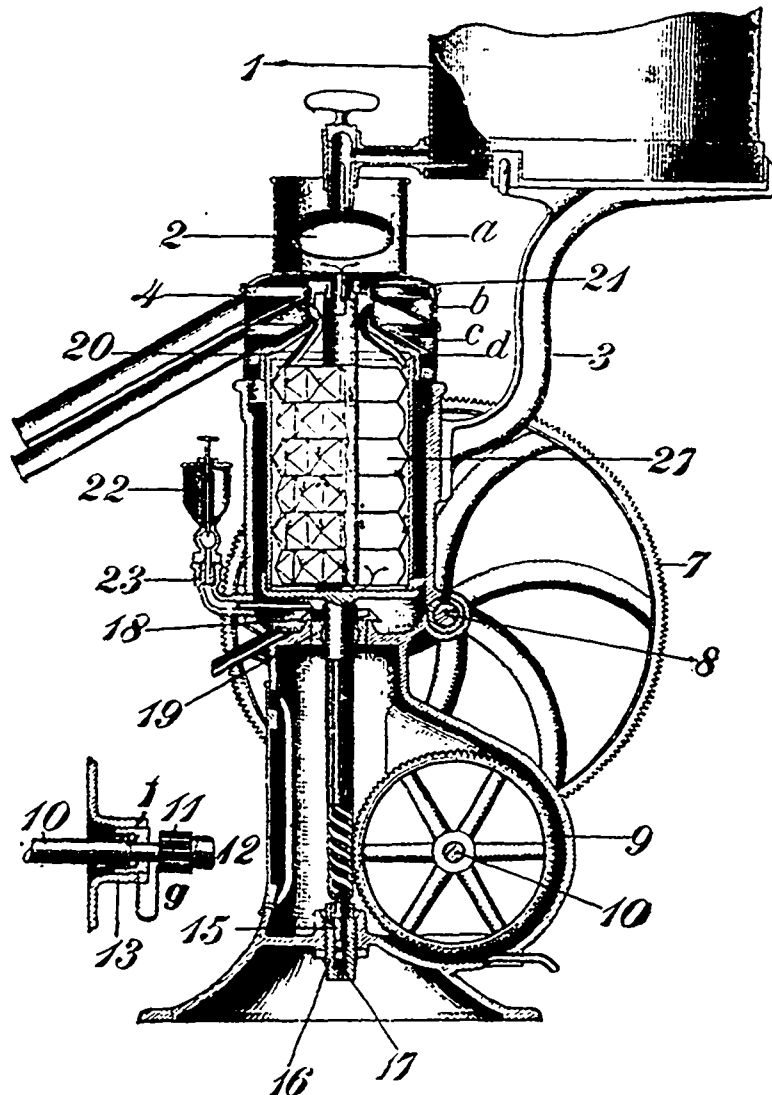
A few years ago the 4,000 pound separators had considerable sale, but operators now wisely prefer to have two smaller machines in place of one very large one in the average creamery.

Whether to purchase a belt or turbine separator is another much-discuss-

ed question. The turbine separator is driven on the principle of the rotary engine, or turbine water wheel. It does not use steam economically, but the same thing is true of many of the steam engines in use in our factories. If the engine has sufficient capacity and is in good running order, the belt separator will be found perfectly satisfactory and more economical than the turbine, but with a small engine that would be working almost up to the breaking strain, and used steam extravagantly, a turbine separator had better be put in. In the hand sizes the larger machines of the different makes can be fitted with pulleys to run by power, either animal, steam or gasoline engines being used with perfect success by practical dairymen.

The following is a list of the principal cream separators sold in Canada:

The Alexandra line of separators is manufactured by R. A. Lister & Co., Dursley, England. Branch houses are located at Montreal and Winnipeg. This separator has a very large sale in Canada. The hand sizes are extensively used by the patrons of the Dominion Government creameries of the North-west. The bowl is made in one solid piece, which does away with the necessity of using a wrench in putting



Sectional view of National Cream Separator.

it together and taking it apart every time it is used, and also the expense of rubber joint rings. The bowl is separate from the spindle, whereby a great deal of wear and tear is taken off the gearing in starting, or if the power is not regular. So far as the writer is aware it is the only separator that the manufacturer advises using a sweep power to furnish the motive force. Neither is the spindle always left in the frame in the Alexandra, so liable to get sprung by careless handling, as when it is attached to the bowl and taken out for cleaning. Eleven different styles and sizes are sold, varying in capacity from 80 to 3,000 pounds per hour.

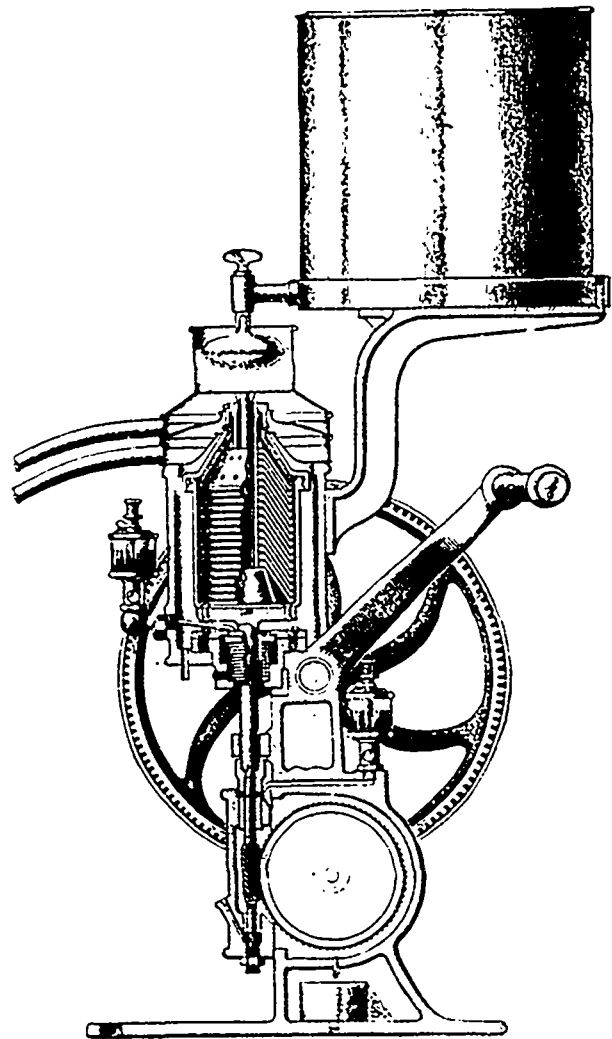
The same firm also act as agents for the Melotte separator. The exclamation of a farmer who saw this separator for the first time was, "It is all upside down," which well describes some unique points in its construction. The gearing is all perfectly enclosed, and by a simple twist of the wrist the gear door may be opened for examining the mechanism. The skim milk and cream chambers, corresponding to covers in other makes, are enamelled iron and much more durable than tin. Special devices within the bowl give great capacity and efficiency, considering the size and weight of the bowl. The bowl plates are of aluminum, which does not rust and give off the peculiar odor of rusty iron, so familiar in the rusty cans that are brought to some of our factories. This machine embodies many original and effective features, but what appeals with greatest force to the average dairyman is the fact that it runs so easily. The bowl is suspended on a spindle which in its turn runs on a race of balls. This machine can be arranged to drive by a jet of steam if desired. The manufacturers advertise to send it out on free trial for

eight days, to work alongside of any other machine. It is made in five sizes from 350 to 850 lbs. capacity per hour, and ranges in price from \$100 to \$185.

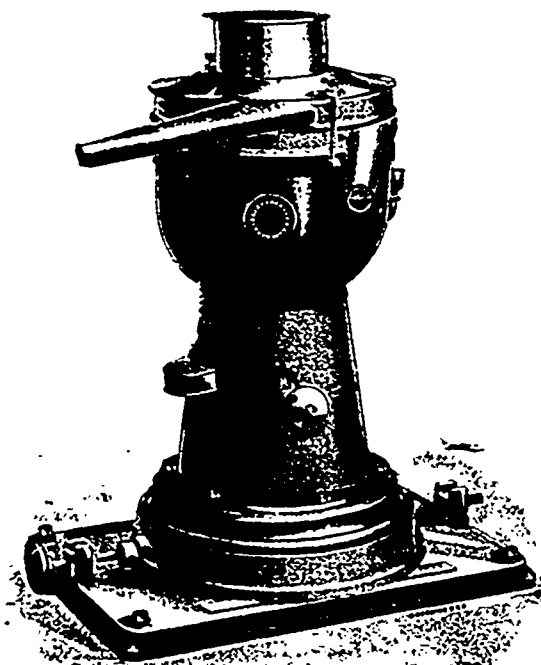
The American Separator is sold in Canada by Richardson and Webster, St. Marys. The bowl is in one solid

piece, a great advantage to the average farmer, and the opening in the top is large enough to permit of easy cleaning. The sectional spring neck bearing is a great improvement to the old style of ring. The gearing is simple and durable. The lower spindle runs on a steel ball. If desired to run by power, pulleys are made to fit either the drawing shaft or pinion wheel shaft. This separator is made in hand sizes only.

For factory use, "The Reid Improved Danish Separator" is sold by the same firm. In it it is difficult to recognize the old Danish Weston machine from which it has been evolved. It is a machine that has stood the test of time. Owing to the large inside bowl surface and the manner of "cutting out" the skim-milk, this machine will run a long time without clogging, or having its efficiency materially reduced by the deposit of feculent matter from the milk. Another valuable feature peculiar to this separator is its ability to elevate the skim-milk to the height of eight or ten feet, doing away with the expense of the pump or ejector. Another excellent point is that the richness of the cream may be regulated while the separator is in motion, a much-appreciated convenience if cream having a certain percentage of fat is wanted for sale, or for any reason if it is desired to change



Sectional view of De Laval Cream Separator.



The "Alexandra" Cream Separator.

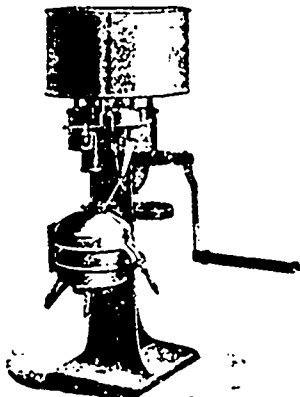
the richness of the cream during the run. The price of the 2,500 lb. belt separator is \$500.

The De Laval separator. This widely-known and popular separator is manufactured in Canada, by "The Canadian Dairy Supply Co.," of Montreal. The distinctive feature of this

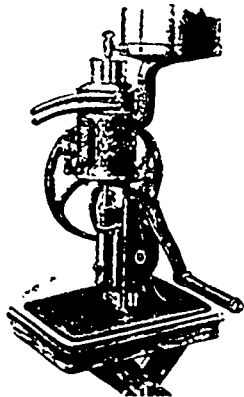
does clean work at low temperatures and in handling "old" winter milk.

The capacity of these machines has recently been increased by an improvement in the way the milk is distributed through the discs, while the new radial spring top bearing is another great improvement. Both of the above may be

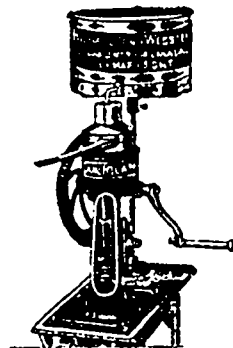
for clean skimming, and is easy to clean. This separator is guaranteed to skim up to its full advertised capacity with no more loss than one-tenth of one per cent. of fat in the skim-milk. The 350 lb. style is listed at \$75. The largest size, style No. 3, has a capacity of 1500 lbs. per hour.



Melotte Cream Separator, hand power.



De Laval Cream Separator, hand power.



American Cream Separator, hand power.

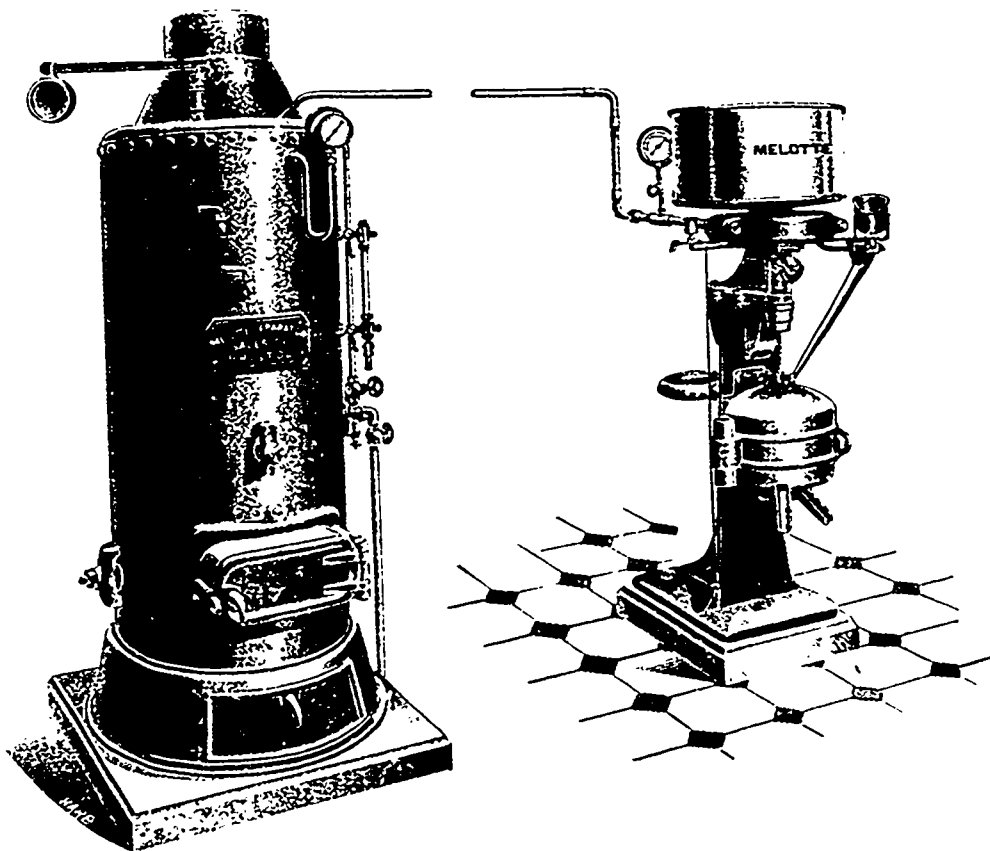
separator is the "Alpha" improvement, or disc bowl device. The bowl is filled from top to bottom with these discs (see cut), which serve the purpose of dividing the milk into as many thin layers as there are discs. It is easy to see that when the milk from the centre tube is by the centrifugal force driven towards the periphery of the bowl, its heavier portion must be forced along the under sides of the discs, while the cream approaches the centre along the top surfaces of the discs. This is a great improvement over the application of the centrifugal force to the milk in a solid bulk. Its efficiency is proved by the fact that it

is fitted to the older machines. In the power sizes the steel point of the lower spindle runs on two trundle wheels, a feature which combines weight-carrying ability, with small friction and great durability.

Sizes vary from 175 lb. to 3,000 lb. per hour, and prices from \$65 to \$525.

The National Cream Separator is made by the Raymond Manufacturing Co., Ltd., and sold by the Creamery Supply Co., Guelph, Ont. It is very easy to turn on account of the spindle running on a steel ball the same as in some power separators, and the worm wheel on bicycle ball-bearings. The bowl contains a very efficient device

The Sharples Separator is manufactured in the United States. The Canadian agents for this popular line are Messrs. D. Derbyshire & Co., Brockville, Ont. Two dairy styles are made, "The Safety Hand Separator," and "The Little Giant Separator." Two sizes in each style are advertised, 300 and 600 lb. per hour each in capacity. The "Little Giant" is driven by a steam jet from a farm boiler. Both styles are neat and substantial in appearance, and do good work. The "Tubular" Nos. 25 and 40, which figures multiplied by 100 give the capacity in lbs. of milk per hour, is a radical departure from all existing



Melotte Steam Turbine Separating Plant.

types of separators. The bowl is driven by a jet of steam, directed at such an angle as to exert an upward pressure on the bowl. "It spins on air" is the claim of the inventor. The bearings are designed with a view to the least possible friction. The top bearing is a unique feature. It consists of a circular brush surrounding the top of the bowl. From a receptacle this brush is kept wet, so that a film of water surrounds and steadies the bowl without sensibly retarding its velocity. The bowl attains the almost incredible speed of 22,000 to 25,000 revolutions per minute. As centrifugal force increases with the square of the speed, we find by comparing the centrifugal force exerted, when the bowl is running at 4,000 revolutions with the force exerted at 24,000 revolutions, that it is multiplied just 36 times, which furnishes a clue to the closeness of skimming in this type of machine. The bowl being so light, little time is lost in getting it up to full speed, and it soon comes to rest on shutting off the steam pressure. The internal devices of the bowl are very simple, and the machine may be quickly and easily cleaned. Belt machines for creamery use are also manufactured.

The United States separator is manufactured and sold by the Vermont Farm Machine Co., Bellows Falls, Vermont. A variety of hand and power (belt and turbine) sizes are made. The effectiveness of skimming of this machine is due to the fact that the milk flows three times up and down the bowl, being subjected all the while to a constantly-increasing centrifugal force. The latest improvement consists in making the internal cups corrugated instead of smooth. This does away with the objection of the cream sticking to the surfaces of the bowls with which it comes in contact. In the turbine machine, one light pad lubricator supplies all the oil needed for the different bearings. The steam pressure regulator is a valuable attachment. In the hand sizes the gearing is enclosed in the best possible manner, so that there is no chance for dirt or milk to get in, and there is no danger of clothing or other obstruction likely to injure the mechanism getting into the gear. The gear cap may be easily removed by loosening two small set screws.

The so-called "aquatic" or "hydraulic" separators are no improvement over the common deep-setting cans. Being made entirely of metal, they conduct heat rapidly, and under ordinary conditions would be more wasteful than where the cans were set in troughs or tubs.

Most Useful Paper Published.

Messrs. B. S. Holdsworth & Sons, Port Hope, Ont., write: "Find enclosed \$1 to pay for FARMING for the year 1900. It is the most useful agricultural paper that is published to-day according to our opinion."

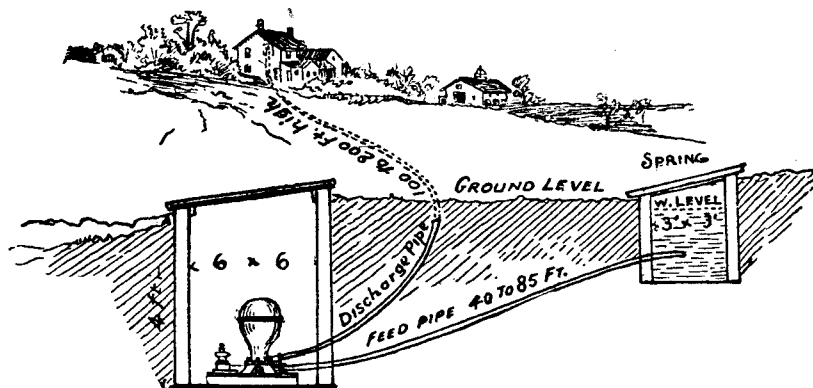
Hydraulic Rams.

Mr. O. J. Dunuth, Ohio, in writing on this topic in a recent issue of the *Ohio Farmer* says: "I have used one for five years and it has given the best satisfaction. It pumps water for my garden, green houses, and plant beds. Will fill a 100-bbl. tank at a height of 30 ft., 300 ft. from ram every 24 hours easily. The size I use takes 2 in. feed pipe with 1 in. discharge. Can get any size wanted from $\frac{3}{4}$ in. to 4 in. feed and $\frac{3}{8}$ in. to $2\frac{1}{2}$ in. discharge, and to use from 2 gals. to 150 gals. per minute and cost from \$5 up to \$65; the size I use, No. 5, will cost from \$11 to \$13. The small sizes use shorter feed pipes than the large ones, the smallest about 40 ft., the largest 85 ft.; there are 10 or 12 sizes. I use 60 ft. on No. 5. The cost of piping to where you want your water will depend on what you will have to pay for pipe which, by the way, is pretty high just now. The ram house and feed box can be built of wood, brick, or

getting out of order. Put a screen on feed box so that nothing can get in feed pipe or it will get in the ram and stop it. Take all the fall you can up to 10 feet although a ram will work on 3 feet fall, but not quite so well.

If the spring will not furnish water enough in a dry time to run the ram, build a tank or cistern on the hillside if you have one, and fill it when there is plenty of water, and pipe it from there to where wanted. Anybody can set the ram and lay the pipes just as well as a high-priced plumber. Just decide how you want it and get at it and do it. I have nearly 1,000 feet of pipe connected to the ram I use, and I did all the work myself and it worked all right from the start. Have your plans laid out first then "be sure you're right, and go ahead."

I think I can truthfully say that hydraulic rams are cheaper and more reliable than wind-mills or gasoline engines, etc. They are handy to get at when they need repairing (which is very seldom) and will run without any



Water Ram.

stone. I used brick for feed box cemented like a cistern, and the ram house is built of stone 6x6x4 deep. Feed box 3x3x3 deep. Put them down nearly level with ground so you can protect them from freezing in winter. Be sure to lay all pipes below freezing and make all joints tight. I would use galvanized pipe. It will cost a little more but will not clog up so soon and will last much longer. But each can use his own judgment about that. The common black pipe will do quite a while just as well.

To find how many gallons of water per minute can be raised by hydraulic rams, multiply the quantity supplied by the spring (in gal. per minute) by 65. Multiply this product by the "head" or number of feet in the fall (that is from spring to ram), then divide by 100 times the height to which the water is to be elevated. The result will give the quantity of water raised per minute in gallons or fractions of gallons. This rule will give some idea, but the smoothness of the pipe and size of pipe will make quite a difference. I would use a larger size than what you think you will need if you have enough water to run it, because the smaller the pipes and ram the more danger of

attention, and whether the wind blows or not.

It seems to me there are lots of farms throughout the country that have good springs with necessary fall and that could make use of a hydraulic ram at small cost, and furnish house and barn with water and save a good deal of backache from carrying water up hill or standing pumping water for a dozen thirsty cows on a hot summer evening when each cow seems to hold a tubful. The cut will make clear the principle on which the ram works.

Farm Tools and Carpentering.

TOOLS NECESSARY OR DESIRABLE ON A FARM.

There is hardly a servant of the farmer more indispensable to him, more secure in his employment, than that essentially practical personage, the general engineer, carpenter and jobber of the farm. Upon all farms, and more especially upon large holdings, it is absolutely necessary that a certain amount of skill and knowledge of this sort should be in the possession of the master, either in himself alone,

in one of his servants, or better, in both—knowledge of engineering, the simpler mechanical laws, and laws of building construction, and skill in the use of the commoner tools of the engineer, carpenter and joiner.

The incoming tenant, perhaps a young farmer does well to take care to stock himself with all those implements, machines, and tools which are always quite a necessity, by purchases upon entry either from the stock of the outgoer, or at neighboring sales, where necessities can sometimes be picked up cheap, although in many cases, notably at the last Michaelmas sales, the crowds of purchasers attracted by the skillful auctioneer ran prices up to far more than the actual value of the tools compared with new and improved ones; or from the manufacturer or tool shop.

The extent of the list of tools and machines which may be counted quite necessary demands upon the size of the holding, whether stock or corn, the building accommodation and its state of repair, and upon the nature of the field boundaries and gates, etc. Moreover, a complete list of multitudinous minor tools which make up the complete tool-chest and workshop of the farm would occupy too much space here. Nevertheless, the following list—showing (1) tools, etc., which may be considered almost indispensable for the repairs and minor constructive works upon a farm of fair size: (2) those which though not a necessity, may be called highly useful additions to ordinary equipment—may be useful to those who are just stepping into the wheel at the present Michaelmas, or perhaps next Lady Day. The list is not put forward as in any way complete; I have merely included those which, from constant observance upon a large mixed and therefore representative holding, I have found worthy of inclusion in the one or the other class.

1. List of

TOOLS INDISPENSABLE

for the repairs, etc., upon a large mixed farm:

1. Carpenter's bench (fixed or moveable) with a good vice attached.
2. Saws (cross cut and bent) and jack plane.
3. Set of tools for nailing work, as claw-hammer, pincers, bradawl, etc.
4. Set for screw work, as screwdriver, etc.
5. Tools necessary for morticing and like work in timber, including mallet, chisel, auger, etc.

To the above five lots may be added all the little minor tools common to every carpenter's bag, such as squares, spokeshave, drawshave, rule, etc.

6. Grindstone and hones, whetstones, etc., necessary for sharpening cutting tools.
7. Axes and handbills.
8. Cart-jack for raising cartwheels to grease same.

9. Set of pulleys and blocks for raising parts of implements under cover for repairs.

10. Mattocks and tools for excavating for gate-post heads, etc.

11. All spanners, clamps, etc., necessary for the adjustments of particular implements and plant, etc.

USEFUL ADDITIONAL TOOLS

and implements for repairs, etc., on the farm:

1. Small bellows, forge; or the engine furnace will answer for most ordinary purposes, but it is important to note that no blast should be applied beneath the fire bar, which would be very destructive to them and the boiler.

2. Iron or iron-capped anvil.

3. Set of tongs for manipulating heated things.

4. Screw jack to raise weights up to five tons.

5. Circular saw and bench for steam, etc., power.

THE USE OF THE TOOLS.

The outfit of tools provided in the first list will allow of all those common and constantly recurring repairs which come within the ability of the farm carpenter, such as, for instance, repairs to gates, hurdles, carts and wagons, chicken coops, buildings and internal fittings, as mangers, ring-posts, etc., and partial repairs to implements and machines, such as ploughs, mowers, binders, etc.; and for these purposes the farmer must be provided with those materials necessary for such works.

Thus he must have butts, hinges, and staples, etc., for gates and doors; rings for hurdle heads, etc.; and the various replaceable and other accessories for the different implements, such as the parts of ploughs, gear wheels to drill, etc.

With the tools included in this list, too, he will be able to venture upon constructive works of a smaller kind, which may well save him many a long bill from the neighboring works or the builder and carpenter. Thus, for instance, he can, if provided with the timber, etc., cut to the necessary scantling, make his own gates and hurdles, build chicken coops and houses, and even construct the common out-buildings and sheds, etc.

When, however, he comes to enter more largely upon constructive works, and wishes to be more independent of the tradesman and works as regards repairs, he finds it well-nigh a necessity to invest in some of the tools, etc., mentioned in the second heading. Thus he may find that to repair a broken cart shaft requires a flat metal strap bent and forged to the requisite shape, with rivet holes and chamfered edges, and hot shrunk round the fracture, when he will find a furnace and forge indispensable.

He may wish to weld the broken ends of a hop or hurdle pitcher; to

straighten the bent cutter bar of the mower; or to renew the iron tyre to a wheel of some implement, or perhaps a cart. He may also, by the help of some of these accessories, undertake to dispense with the smith altogether, and shoe his own horses.

They also afford good, profitable employment for the hands on a wet day. The third implement on this list is especially useful, for the latter reason not less than for many others. Waste timber, such as old rotten posts, decayed trunks of trees, etc., may be sawn up into logs suitable as firewood for the engine boilers or the farmer's house. I have seen excellent use made of a circular saw driven by steam power in sawing up logs to 7-in. or 9-in. lengths for the purpose of floors to cart-lodges and cattle-sheds. I have been assured that it is excellent material for the latter purpose, if placed upon a solid foundation and well set in mortar and cement.

But the farmer provided with a circular saw 2 ft. 6 in. to 4 ft. diameter becomes much more independent of his landlord for timbers of the necessary scantling for a variety of purposes, such as gates, roofs, cart bottoms, etc. He is often obliged, unless provided with a saw, to send long distances to the owner's sawing pits for single items, such as fence bars, posts, etc., which may not even then have been sawn to the right size: meanwhile his cattle may be breaking out and running amuck, or one of his sheds may be lacking a roof-end.

Given such a tool, the bench firmly fixed, and a set of bench blocks for sawing to size, the farm carpenter should be able to perform all such cutting out of baulk timber, posts out of felled tree stumps, or fence bars out of larch or chestnut fence poles, which are often to be bought very cheaply in the rough state.

Good and serviceable implement or cattle sheds can be constructed out of condemned railway sleepers and telegraph poles, with corrugated iron or other material for roofs or weather sides. The sleepers, sawn to length, make very durable wall posts; while the telegraph poles can be sawn to the required scantling for all plates and roof timbers. We recently constructed a large lean-to shed for a portable engine and thresher in this way.

Not the least advantage of having a circular saw on the farm, too, is that it affords profitable employment at times when it is impossible to keep the men out on the land through wet weather.—*English Farmer and Stockbreeder.*

Aunt—Don't deny it. I heard your lips meet as I came in.

Alida—Yes, aunt, dear, it was such an accident. I was about to whisper something into Carl's ear when he at the same time moved to whisper something into my ear—and—well, he was just as sorry as I.—*Sondags-Nisse.*

Machinery Agents Helped By Advertising.

A caller at the office of FARMING a fortnight ago was Mr. Whyte, manager of the Frost & Wood Co., Ltd., Smith's Falls, Ont., manufacturers of agricultural machinery.

Mr. Whyte is one of Canada's shrewd, pushing business men and is always ready to take up a proposition that he can be satisfied will help the sale of the special lines that his company manufacture.

These include binders, mowers, rakes, reapers, cultivators and other useful implements for the farmer.

A representative of FARMING was anxious to obtain Manager Whyte's views on advertising as a means of helping the sale of their machinery, not alone direct, but through their agents.

"I can give," said Mr. Whyte, "a very direct reply to your enquiry. We were curious about this point ourselves, and set about gathering data by making enquiries of our agents if advantage came to their calls where the name of our goods and their special features had been set forth in the columns of an agricultural paper like FARMING.

"The replies," continued Mr. Whyte, "were very satisfactory. Perhaps I cannot do better than let you have a clipping which our manager in New Brunswick sent us as embodying his answer to the enquiry."

Here is the quotation:

"This sort of thing works both ways. Most manufacturers sell through agents. If the goods are advertised in the papers read by the class that consumes the goods, the agent finds them familiar with the name, and all he has to do is to begin talking up the goods, being saved all the preliminaries of introducing two strangers to each other.

"If I were making farm machines, I would get some fellow to get me up some ads. that would give farmers an intense desire to meet a man who had my machines to sell. I would create a desire to see the goods, and when my agent came around he would find a lot of people who were waiting for him.

"When an agent goes to a man and says: 'I am representing the Back Action Check Row Corn Planter people,' and that man says: 'Yes, I seen it advertised in a paper I take, an' was a-wondering what it looked like an' how the thing worked,' a sale is half made. All the agent has to do is to take out his catalogue and show the farmer where it is better and cheaper than any other corn planter on earth, and he gets him.

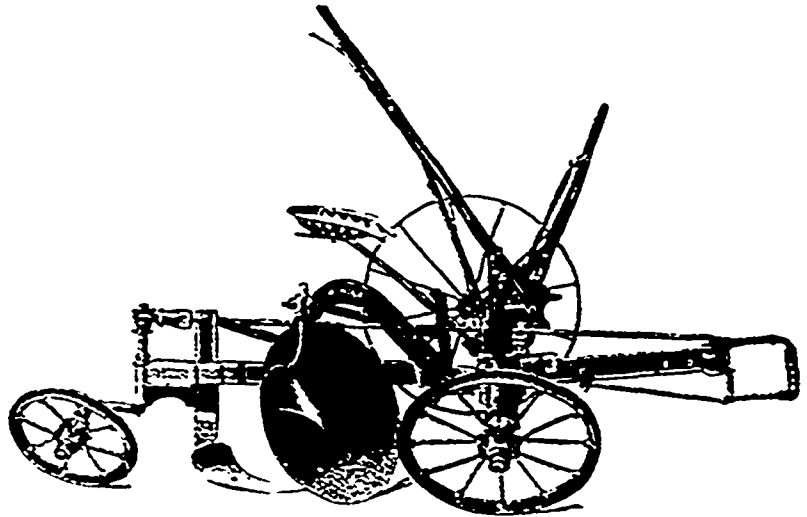
"On the other hand, the agent who strikes a man who never heard of his machine has a hard row to hoe. He must tell where it is made, and how long it has been made, and after he is done the farmer will tell him he 'wuz a-thinkin' of gettin' one he see advertised into the paper.'

"The man who thinks the farmer

doesn't read advertisements is very badly mistaken. In the busy season he may not read how to husk pumpkins or prune cabbages, but he reads every one of the displayed ads., and knows all about them. Only the other day I met a farmer who asked me about almost every machine that is advertised in the farm papers. He knew about as much about them as I did, although it is my special business to keep posted concerning these things. Most farmers think they know how to run a farm, but they are ready to be told something new about machinery, and are easily convinced if the machines have real merit."

Our representative, after reading the extract, thanked Mr. Whyte for putting it in his hands, "for," said he, "this confirms my own personal convictions that the success of any article of manufacture is largely increased by constantly keeping the merits of that article before the public, and are likely to want it. The work of the agent is

the same way. Within a few years, however, the disc plow has made its appearance, and has not only gone into successful use generally, but bids fair to supplant the old way of plowing in certain soils. With the old-style stationary moldboards the earth has to slide or slip across it, which is called scouring or cleaning, and which, in the black soils of Texas and other localities, is not always possible of accomplishment under certain conditions; besides, when plows do scour, much friction results, with its consequent wearing away of the mold and share. On the other hand, the disc revolves, which does away with very much of the friction, and it pulverizes the soil and covers the weeds and trash more effectually than by the old way. Some of the objections to disc plows, as heretofore made, have been that they did not cut a square sided furrow, and that their clumsy construction and stationary axles made them awkward to handle and guide. This



much simplified when he goes to a prospective customer and talks to him of some piece of machinery, as in the case of that of the Frost & Wood Co., which has been made familiar to him from frequently seeing the announcement of the firm in FARMING, and in that way been made acquainted with the special features and advantages that such a piece of machinery may possess over some other.

Manager Whyte was not slow to appreciate the benefits that their company had received from advertising in FARMING, and we believe there are others who are ready to be just as frank and outspoken in their statements of the value of this journal, particularly to the manufacturer of agricultural machinery.

A New Disc Plow.

The following description of a new kind of disc plow appears in a late issue of the *Farm Implement News*:

Ever since our Pilgrim fathers first cut from the forest "winding" trees from which to make wooden moldboards for their plows, the soil has, in this country, been turned in practically

was particularly so when turning corners, as the wheels, working on rigidly-set axles, had to be dragged around in the dirt sideways, at the risk of breaking the wheels and axles. But with the Wonder disc plow, these objections are things of the past, and it is logical to assume that this make will hereafter take precedence in many parts of the country over plows that turn the soil in the old way. On the Wonder, varying from straight ahead to side draft upon the clevis changes the position of the clevis, which, in turn, by means of connecting rods between clevis and wheels, sets the wheels so they always track in line of draft, so there is never any side strain on wheels or axles. These plows can therefore be made much lighter throughout, and are more easily handled than other makes. A small plow follows the disc and squares the furrow, turning the soil it cuts and leaving a square corner for the rear wheel to run in, which secures a furrow of uniform width and depth. Further particulars as to the good points of this disc plow may be had by referring to the illustration accompanying this article.

The Farm Home

A Plain Country Wedding.

Before.

By Megyra.

There are times and seasons for everything, but weddings seem to be in season all the year round.

There are many minor points about which the bride and her helpers are in doubt. As I have recently been a helper, I am going to tell you, not how everything should be done, but how we produced very satisfactory results.

If I were setting out to give advice, I should advise the bridal pair, without fuss, finery, or friends, to go to the home of the minister and have the knot securely tied, with the necessary witnesses, only, present. People seldom take advice unless it accords with their preconceived ideas.

In the present case I am not prepared to say how the young man proceeded with the courtship and proposal, but I suppose in some manner he came to the point and said "—, will you have me?" and she replied "Yes, sir." But, when the day was set, the question of invitations arose. Who shall be invited? The young folks said, "only young folks." Their elders said, "only the older people." However, it was left for the parents to decide, and, consequently, a list was made out including all the aunts and uncles of the bride and the older cousins, and, as she was so soon to "belong" to her husband, it was only fitting that her new relatives should also be invited. The complete list made the number considerably over a hundred. To write and deliver so many notes would mean much work. Verbal messages would mean more work, so the more formal invitation card was adopted; but it was not considered necessary to send one to each guest, but to address the outer envelope to the head of the house, and on the inner envelope was written:

Mrs. and Mr. John Smith,
Miss Mary and Mr. William.

These were sent two weeks before the day set for the wedding.

The wedding cake was made and sent to the confectioner's for its trimmings.

As the trousseau, with the exception of the dresser had been previously prepared, the mother and daughter went shopping and a good quality of white cashmere was considered most serviceable as a bridal robe with satin and pearl trimming, and suiting cloth of grey serge, and an extra waist of a very becoming shade of pretty silk were selected. Instead of taking these goods to a dressmaker, two were

brought to the house, where the work was done much more expeditiously.

"Wedding breakfast hot or cold?" was the next question. As many of the guests were coming long distances and the weather cold, a hot dinner was chosen and instead of seating all at one table, we decided that we could have a jollier party with a table of honor and quartette tables. The father being a "handy man" gathered up lumber and tools and went to work and constructed the required number, seven, each three feet long and two and a half wide. The legs were hard wood planed, being about two inches or two and a half square, the corners being finished with, I should judge, a spoke-shave. The frame and top were of soft wood also planed. It would not surprise me if some of these figure in the furnishing of the new home as kitchen table, dressing table or even with a fancy cover as a sitting-room table.

As the wedding was set for Wednesday evening, we thought it best to get much of the work done the latter part of the previous week, so five of us proceeded to the warm stables where we killed and picked the unlucky number of fowls, thirteen turkeys and ducks. These were also drawn and dressed ready for the oven and placed in a cool room. The crusts for twenty lemon pies were also baked.

The week of the wedding has arrived, and an extra stove placed in the kitchen. During the day the baking and icing of cakes, the cooking of cranberry sauce, and the finishing of the pies, was done, and in the evening the decorations were arranged. Lambs of evergreen, clothes-line ropes, binder twine, and balls of carpet warp were brought into the dining-room. The children broke off small branches, and with the warp the older girls tied these to the ropes and twine. When completed these were secured to the upper corners of the room, and caught up to the ceiling in the centre, going diagonally across, and were also festooned around the walls on the picture nails.

A bell-shaped frame of fence wire (not barbed) was made large enough to hang over the bride and groom. On this was stretched half-inch white tape, leaving six with diamond-shaped openings, and at each crossing a sprig of evergreen and bridal roses were pinned. Natural flowers being impossible, unless at great expense, from the city conservatories, we substituted white tissue paper, making several dozens of roses. The tongue of the bell was made of picture wire, with a bunch of roses in which a pasteboard candle-holder was placed, which contained a tiny wax candle. This was suspended in one corner of the parlor.

The wedding presents having begun to arrive we removed the furniture from the parlor bed-room, and replaced it with tables on which we arranged the china, glass, silver, and linen, and of course had room on the floor for such gifts as chairs, music stands, etc.

As no farm-house contains sufficient for one hundred guests, the son of the house visited his near-by aunts and returned with his sleigh loaded with chairs and dishes.

(To be continued.)

The Loss of the Buster.

By H. Phelps Whitmarsh in Saturday Evening Post.

"Were I ever shipwrecked?"

Captain Rattlin smiled in a peculiar way as he asked this question.

"Were I ever shipwrecked?" he repeated, sniffing contemptuously and casting his weather eye down the beach in search of a possible customer. "Wy, what a question to hask of a master mariner as 'as bin sailing all over the blessed ocean for nigh onto fifty years! I might as well hask you young gentlemen if you hever robbed a orchard."

The old salt laughed loudly at his sally. The three "young gentlemen" from Doctor Kenyon's Academy also laughed.

"Wy, bless yer innocent 'earts, I've bin cast away more times than there is 'airs on the top of my 'ead."

As the captain's sou-wester was jammed down tightly over his ears the boys could not estimate with accuracy the number of his experiences. They were impressed, however, with the statement, and begged that he would tell them one, just one, of his "yarns."

"It's agin my principles," said the captain, settling himself comfortably on the side of his boat, "to give my hexperiences, except in the way of business. Only the other day a gent as writes for the magazines comes along and says, 'Captin,' he says, 'I've got five gold soverins in my pocket for you if you'll let me take down one of your shipwrecks.'

"'Much obliged, sir,' says I, 'but them ere shipwrecks o' mine is part of my stock in trade, and if they comes out in print I'm done for. The parties as goes out sailing in my boat would be saying, 'Wy, captin, we read that story in the so-and-so, written by the celebrated hauthor, Mr. So-and-so,' and they'd think I was lyin' to 'em. 'No, sir,' I says, 'I'm thankful to ye, but I'm not selling my shipwrecks to-day.'"

The captain looked out to sea with the air of a man who had had his say. Then he began to cut himself up a pipetful of tobacco in a provokingly slow manner. The boys meanwhile,

with a promising knowledge of human nature for their age, were putting their pocket-money together.

"This is the wrong end of the week for us to have much pocket-money, captain," said the boys, "but we should like awfully to have you drink your own health at our expense; and if you'll tell us one of your shipwreck stories we'll promise to keep it a secret."

"Of course, on them conditions," said Captain Rattlin, as he dropped the coppers one by one into his capacious pocket, "and seeing as 'ow I'm a dealin' with honorable young gent's as knows that fifty years o' salt water makes a man powerful thirsty, on them conditions, I say, I'll 'ate one o' my shipwrecks."

"In the year thirty," began the captain, "I were second mate of the brig Buster, of Liverpool. She were a rummy looking old hooker, built of wood, of course, as all of 'em was in them days, with a square stern and a square bow, and for all the world like them ships they builds by the mile and cuts off at any length to suit. If anything got athward of 'er bow, she'd punch it along in front of 'er for a day or two. But her stern was as good as a taups'l in a fair wind, and she were as good a sea-boat as ever rode salt water."

"The voyage I were in 'er we went clear around the world—that is, we would 'a done if we'd finished it; and we was out the best part o' two years. Our first port was New York, where we shipped a cargo o' notions—pianners, clocks, music-boxes and them kind o' things, for Orstralia. My 'but that were a lively passage. Every time we struck a good, stiff breeze the music would begin—pianners a-bangin', clocks a-strikin', an the boxes playin' everything from Annie Rooney up to Sunday school hymns; and when we caught a bit of a gale off the Cape, the Buster were a regular floating music 'all. Ah, but she were full o' chunes."

"From Melbourne we took horses up to Calcutta, which were a purty lively trip, too, on account of us running into a couple of cyclones lashed together in the Hindian Ocean, and seeing as 'ow the hanimals kicked us black and blue from truck to keelson afore we got into the Hooghly. Then we ran down into Achyab in ballast and took in a load of rice for the Chuncha Islands, where there was a lot of Chinese coolies working. After the rice was out the captin' tried to get a cargo of guanner for to take back to Liverpool, but, do all he could, he wasn't able to get more than enough to half fill the Buster, so we set sail for Callao, hoping to pick up some freight there."

"Well, by good luck, or bad luck, as it turned out, there were a bloomin' lunatic in Callao s had some sweet pertaters that he wanted took to Liverpool, and after we loaded down

to Plimsoll we started 'ome with the lower hold full of guanner and with four hundred tons of them 'ere wegetables stow'd atop.

"Heverything went uncommon well unti' we was well round the 'Orn. We got one or two blows on the way w ich shook things up a bit and o' course the smell of the guanner were a trifle high, but we soon got used to that, and was werry 'appy, thinkin' we'd soon be back in Liverpool again.

"We'd just run into the south-east trades, howsomever, when one mornin' a big passenger clipper as were sailing to leeward on us hauls up into the wind and signals that she wants to speak us. We, naterally, ups our hellum and runs down to 'er, thinkin' she were in distress. We noticed as all the people aboard of 'er was a oldin' 'anferchiefs to their noses, but somehow we didn't think anything on it until the captin' of 'er began to 'oller through 'is trumpet.

"'Ahoy,' he 'ails, 'what brig is that?'

"'The Buster o' Liverpool swers our skipper.

"'What's yer cargo?'

"'Guanner and sweet pertaters.'

"'Thought you was loaded with rotten eggs and dead mules.'

"'Well, s'pose we are,' shouts our captin', gettin' 'is dander up; 'it's better than being chock a-block with live hasses. What do you want, anyhow?'

"'I want you to take your stinking old brig to leeward o' me and my passengers. The smell of you is giving us all typhoid.'

"'You be blowed,' yeils the skipper.

"The next minute he gives orders to brace up, and we starts to wind ward of the clipper again in a jiffy. And it was four days before that clipper got away from us.

"Well, after that the old man worried considerable. 'Im afraid, Mr. Rattlin,' he says to me one day, 'we must be in what you might call a purty hoderous condition. I think you 'ad better take all three 'atches off and give us a little hair. I'm not particular hanxious,' he says, 'to bust the Buster.'

"'Wery good, sir,' says I, and I goes to the carpenter's shop for an 'ammer and begins knocking the wedges out o' the main 'atch. And, by George, young gentlemen, it were uncommon fortunate as we didn't wait no longer. After I'd given the comb'n' three taps I sees the middle of the 'atch bulgin' up'ards. 'Stan' by,' I yeils, and the wery next hiistant up she goes. All I hears is a great big puff, which blows me into the scupper, where I lays a looking up into a skyful o' yeller guanner dust, bits of tarpaulin and sweet pertaters. Ay, uncommon fortunate it were for us that we give 'er that vent. The old man, who had a fine 'ead for figures,

reckoned that if we 'ad waited another ten minutes us and the Buster would a bin in bits all over the South Atlantic.

"After such a hexperience we didn't dare close the 'atches at all, and as we 'ad a hextraordinary lot o' rain in the trades, the fust thing we knew them 'ere sweet pertaters was a sproutin' at the rate o' knots. Ye see, the orful shakin' up we'd 'ad aroundin' the 'Orn had mixed things in the hold purty much. The guanner were all around the wegetables, and the wegetables was into the guanner, and wot with that and the rain and the tropical 'eat the Buster's hold were a reg'lar forcin' 'ouse.

"Fust off, we didn't think much on it. All on us 'ad seen spuds sprout at sea afore, and it never hurted anythink—'cept the spuds. But these 'ere sweet pertaters from South Ameriky were a different breed. They ain't like our spuds—they're creepers; they climbs just the same as these 'ere beans they call scarlet runners, and when they're planted in guanner there's no 'oldin' 'em back. Well, blow me if in three days the 'atches weren't like a bloomin' jungle, and in a week we knocked off regular ship's work and all hands turned to with their knives a-trying to keep down the sweet pertater vines. But, bless yer, it warn't no use; it were just like tryin' to keep back the tide. If we managed to get one of the 'atches on during the day it 'ud be busted off during the night, and for every vine we'd cut off two 'ud shoot up in its place. By the time we got into the doldrums we'd about give it up as a bad job. It soon got so bad that we couldn't get aloft in any way wotsumever, so we just drifted around in the rain and 'eat o' 'ere sweltern' lattitood, a flyin' signa's and a-growin' greener every day.

"One day, arter we'd been driftin' about for nigh onto a month, the men came ait through the sort o' tunnel we'd cut under the vines on the starboard side, and wants to see the Captin', if you please.

"'Well,' says the captin', stepping on deck, 'wot are you men arter?'

"'Axin' yer pardin, Captin',' says old Spike, the bos'un, 'but we've 'ad enough.'

"'You 'ave, 'ave you?' snaps the skipper. 'For 'eavin' sake, wot more do you want? 'Aven't you got a good ship under yer, and yer full allowance, and ain't yer wages a-runnin' on all the time?'

"'We ain't findin' no fault with the grub, Captin', nor yet with the wages, or the officers. Wot we say is that we shipped on a brig, not on a floatin' island. We can't see nothin' out of this snarl o' tater vines, and every ship will give us a wide berth, thinkin' o' course, we're a lump o' land. Wot we keeps a-harskin' oursel's is, 'ow is it going to enc, sir? The insects is a eatin' of us up, and the fowls o' the hair is a buildin' nests aloft. It won't

be long, sir, afore the Buster'll 'ave snakes and tigers.'

"Don't dror on that wonderful himagination of yours, Spike,' says the skipper: 'come to the point.'

"Seeing as 'ow you puts it that way, sir,' says Spike, 'I will. The fact is, sir, we're for leavin' 'er. Hevery man for'ard is for takin' to the boats.'

"Never,' says the old man, looking werry dignified: 'never with my permission. If you men 'ave made up yer minds to such an hunlawful course I shall not interfere with you. But me,' he says 'me and the Buster sinks or swims together.'

"Well, young gentlemen, when the old man says that I feels purty much like cryin'. 'Ere's one, captin', says I, 'as'll stan' by yer.'

"Thank you, Mr. Rattlin,' says 'e: 'you're a man. Is there any inore men aboard?'

"But there wasn't another hanswer. Even the mate—a chicken-'arted swab he were—went over to the men's side.

"Next morning they began clearing away three of the boats. It were a tough job, I tell yer, and it were a week before they was ready to start for the African coast, which the mate reckoned were about 700 miles to the eastward. At the last minute the mate stands up in the stern of his boat and begs the captin' and me to go along with them.

"Wot's the sense, captin', he says, waving his 'and, 'of you two standing by a mounting o' green stuff like this? You can't save 'er, and she wouldn't be wuth anythin' if you could. She'll go down with yer one o' these days, like a lump o' lead. Leave 'er,' he says, 'you've done yer dooty by the owners: now save yourself.'

"All the hanswer the old man made was to turn on his 'eel and walk into the cabin.

"Good-by,' shouts the mate, when he sees we was determined to stay by the brig. 'Good luck to ye.' And with that the boats shoved off and sailed away.

"About a week after the men 'ad left us, as I were creepin' fo'ard to the galley one morning, for o' course I were cook, mate and crew at that time, I noticed that it were like going up 'hill, and I told the old man about it when I went aft with the coffee.

"Aye,' he says, 'I've known it for two days. She's a settlin' by the stern.'

"Wot's yer horders then captin'?' says I. 'We can't stay in this 'ere cabin and be drowned like rats.'

"Oh, there's no 'urry, Mr. Rattlin,' 'e says. 'With the cargo she's got in 'er the Buster'll sink wery slow; in fact, 'e says, 'I doubt wery much if she goes down altogether.'

"That's comfortin', sir, says I; 'but don't you think it would be advisable to make a few preparations in case she should go down?'

"Quite hunnecessary, Mr. Rattlin,' he says. 'When the cabin floor's awash we'll shift to the fo'c's'le head, and when the bow goes under we'll take to the maintop, and if that ain't high enough we can straddle the cross-trees, or hang on to the truck. There's no fear of us bein' starved with all these 'ere wegetables and hinsects aboard, and ther's plenty o' rain in these lattitoods.'

"Just as the skipper were a talkin' the Buster's stern give a peculiar sort of sag down and stayed there.

"Eavings" I says: 'she's beginnin' a ready. We'd better go for'ard, sir.'

"Now, please don't get excited, Mr. Rattlin,' he says, as cool as a cucumber. 'There's no water in the cabin yet.'

"Hexcuse me, sir, says I, 'but I've got a fam'ly at 'ome as I 'opes to see once more.'

"Well, young gentleman—you can believe me—I'd 'ardly sat myself down on one of the night heads when, all of a sudden, the Buster rears up with 'er jibboom pointin' to the sky and 'er whole stern under water up to the mainmast. Nothin' but them 'ere pertater vines prevented me from fallin' and losin' the number o' my mess. O' course I thinks the old man were gone, and I feit uncommon bad about it, seein' as 'ow he'd allers been a good friend o' mine, and when I had settled myself comfortably on the nose o' the figure-head I shed a few tears to his mem'ry. In the middle of my mournfulness, howsumever, blow me if the old man didn't poke his 'ead around the bowsprit.

"Oh 'ere you are, are you,' says 'e. 'I was afraid as you'd fell over board. I've had a nice refreshin' bath,' he says.

"No 'urry, I s'pose, in gettin' out o' the cabin, sir,' I said, sarcastic like.

"Dear me, no,' 'e says. 'As the water come in at the porthole and sky-light I floated up out o' the door. But I must hadmit, Mr. Rattlin, that my calculations was a bit off. But now that the brig has taken this position I think you'll find that she'll sink wery slow—certainly not more than three foot a day. The end o' the jibboom is still forty-five foot out o' water; so, you see, we'll 'ave 'er under us for at least fifteen days.'

"And, sure enough, the old man's figgerin' were correct. The Buster settled two foot nine per day to a hinch. Before she got down to the foremast I were able to fill one of the chicken coops, as was floatin' around, with sweet pertaters, which I tethered with a stout manilla line to the jibboom end. In this 'ere way we kep' our provisions with us.

"Lower and lower sunk the Buster 'till at last there was only three foot stickin' out o' the water. Both on us then was lashed with one rope, with the thin end of the jibboom between us.

"Now, Mr. Rattlin,' says the cap-

ting to me, 'we must get a good sleep to night, for the sea will be up to our necks in the mornin'.'

"Werrv good, sir,' says I; 'I'll do my best.' But, bless yer, wot with the cold water a-creepin' np toward my throat, and the old man's snorin', I couldn't get a wink.

"As soon as the sun comes up I says to the old man:

"If you've no objection, sir,' I says. 'I'll cast off this 'ere lashin' and take to the 'en coop. Not but wot I likes yer company, sir, but I'm a-swallerin' a trifle more salt water than is good for my stomnick.'

"By all means, Mr. Rattlin,' 'e says.

"Ain't you a-comin', too, sir?' says I.

"Oh, there's no 'urrv 'bout me, Mr. Rattlin,' he says. 'You see, me and the Buster's bin friends so long I just 'ate to leave 'er.'

"I've a sort o' haffection for the old gir! myself, sir,' says I; 'but I'm more taken at present with the 'en coop.'

"About noon that day I begins to get sort o' hanxious about the old man: though he kep' his face up, I see 'e were shippin' a good deal o' water. But 'e wouldn't leave 'er. I talked to 'im perlite, and I said bad words to 'im. I told him 'e were a hijut and a soocide, and did all I could to get 'im to unlash 'isself. But 'e only shook his 'ead, and said, 'She's stood by me this twenty years and now I'll stand by 'er.' And them were his last words.

"Ow were I saved? Oh, I were picked up by a Cape steamer two days after. I were takin' a bit o' lunch, when I 'ears a voice behind me sayin', 'Wot ship is that?'

"'En coop number one, starboard side of 'he brig Buster,' says I.

"With that they sends a boat for me, and—"

At this point Captain Rattlin suddenly stopped. Excusing himself on the plea of "business," he rolled up the beach toward a second edition of himself.

"There's only one thing about that story that I don't understand," said one of the boys, after the master mariner was out of hearing. "He says he was picked up by a Cape steamer. Now, there weren't any ocean steamers in 1830."

"Let's ask him about it," suggested one of the listeners.

But it was too late. Captain Rattlin and his companion had disappeared behind the doors of the Ship Inn.

Housekeeper—Why are apples so high in price?

Market Man—'Cause they're scarce, mum.

"But the papers say the crop was so enormous that apples were rotting on the trees all over the country."

"Yes'm. That's why they're scarce. It didn't pay to pick 'em."—*New York Weekly*.

Farming.

A PAPER FOR FARMERS AND STOCKMEN.

Managing Director, D. T. McAINSH
Editor, J. W. WHEATON

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QUESTIONS AND ANSWERS

FEEDING BEEF TO POULTRY.

A reader asks: "To induce hens to lay in winter and to commence early, what should I feed them? I have beef; would you feed it raw or cooked? Would you put a little cayenne pepper with the beef?"

Feeding during the winter is something that must be attended to very carefully. Half an ounce of beef cut up fine and fed once a day is a good ration with other feed. It may be boiled, but is not improved in that way. A little black pepper is sometimes good as a condiment. A pound of ground bones for sixteen hens three times a week is enough. A writer in one of our poultry exchanges gives the following method for inducing pullets to lay in winter: We got a bone-cutter, some wheat middlings, some more bone meal and began—having turnips, potatoes, cabbages, and beets in abundance. We found the pullets were not quite plump and fat and began to feed them pretty liberally on corn at night. For morning we gave them, one morning whole wheat and at noon about half an ounce of fresh-cut bones each. In the middle of the day we put some of the vegetables in the bone cutter and ground them up, giving the pullets all they would eat. The next morning we gave a soft mess made up of wheat middlings to which was added some cotton-seed oil meal, ground and dried meat meal, bone dust and a little bit of salt. This variety kept them eating with a good appetite and it was delightful to see how their combs began to get red and

their plumage glossy, and soon they began laying again with perfectly satisfactory regularity.

Cheese and Butter Makers' Convention and Dairy Exhibit.

The Cheese and Butter Makers' Association of Western Ontario will convene at the Town Hall, Ingersoll, Ont., on Wednesday and Thursday, January 31st and February 1st. There will be three sessions on Wednesday, January 31st, convention opening at 10.30 a.m. Afternoon session at 1.30 p.m., and evening session at 7.30. Two sessions will be held on Thursday, morning and afternoon. There will be an exhibit of cheese and butter in connection with the convention, when \$150 in cash prizes will be given, together with valuable special prizes.

The Mayor of Ingersoll will deliver an address of welcome to the delegates. The list of speakers includes the following names: Hon. John Dryden, A. F. MacLaren, M.P., Harold Eagle, R. M. Ballantyne, Prof. H. H. Dean, Mark Sprague, G. G. Publow, Archibald Smith, John Scott, Fred Dean, W. Waddell, Jas. A. Gray, Jas. Morrison, Geo. McDonald, C. O. Luton, R. Johnson, and T. E. Nimmo. Among the subjects to be discussed will be: "Care of Milk," "Cheese-Making," "Summer Butter-Making," "Winter Butter-Making," "Pasteurizing," "Flavor in Milk, Cheese, and Butter," "Preparation and Use of a Starter," "Handling Gassy Curds," "Cream Separators," "Experience of Past Season," "Judge's Report on Dairy Exhibit." The programme has been carefully arranged. The papers will be practical and pointed, with a view to bringing out a free discussion on all subjects in question. Every maker within reasonable distance of Ingersoll should arrange to be present at this gathering. Practical addresses by practical men will be the order of the day.

Nova Scotia Farmers' Association.

The fifth annual convention of the Nova Scotia Farmers' Association will be held at New Glasgow, Pictou county, on Wednesday, January 24th; Thursday, January 25th, and Friday, January 26th, 1900. A good programme is being prepared, and a large attendance is expected from all over the province. A number of leading prominent provincial agriculturists and stock-breeders will address the sessions, of which there are three each day. Dr. William Saunders, director of the Dominion Experimental Farms, and Mr. J. H. Grisdale, the agriculturist at the Ottawa Farm, will also be present and address the meetings, and meet with the farmers of Nova Scotia.

CHAS. R. B. BRYAN,
Durham, N.S.,
Secretary.

Canadian Holstein-Friesian Association.

The seventeenth annual meeting of the Holstein-Friesian Association of Canada will be held at the Albion Hotel, Toronto, on Tuesday, Feb. 6th, 1900, at one o'clock p.m. The Executive Committee will meet at ten o'clock. Mr. A. C. Hallman, New Dundee, Ont., gives notice that he will move to reduce the registry fees for animals over one year old and also to transfer fees. Everyone interested in Holstein-Friesian cattle is invited to attend. Members will please note that the annual fee for 1900 is due Feb. 1st. G. W. Clemons, secretary, St. George, Ont.

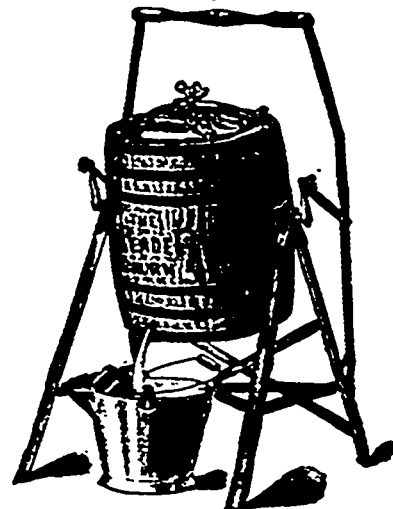
Leeds and Grenville Institute.

The North Leeds and Grenville Farmers' Institute will hold meetings as follows: Easton's Corners, Jan. 15th; Frankville, Jan. 16th; Bishop's Mills, Jan. 17th; Kemptville, Jan. 18th, and Burritt's Rapids, Jan. 19th.

South Wentworth Institute.

The South Wentworth Farmers' Institute has issued a neat and attractive programme of their meetings for this

If Buller, Bobs and Kitchener,
All heroes world renowned,
Would whip the aggravating Boer
And with him wipe the ground,
Blow up his little laager.
On his kopje float their banners,
They might consult yours truly—
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year. The regular meetings took place at Ancaster and Stony Creek on Jan. 4th and 5th. Supplementary meetings will be held as follows: Jerseyville, Feb. 7th; Eustice's Hall, Feb. 8th; Carluke, Feb. 9th; Glenford, Feb. 10th; Binbrook, Feb. 12th; and Tapleystown, Feb. 13th.

In Aid of Our Soldiers.

The 5th edition of E. B. Biggar's "Boer War, Its Causes, and Its Interest to Canadians," is now in press. The entire profits of this edition will be devoted to the relief of needy women and children who are dependent on our soldiers now in South Africa. The price of the book will remain as before, 10 cents per copy, but those who wish to contribute an additional mite towards this fund may forward 15 cents or more, as they feel disposed. To those who wish to purchase copies to send to friends, the book will be supplied at the rate of 12 for \$1. Address: Biggar, Samuel & Co., Publishers, Toronto or Montreal.

Sheep in Illinois.

In 1893 Illinois contained a greater number of sheep than for a number of years. The number of sheep and the values thereof, as taken from statements of property assessed for the years 1893 to 1899 is shown in the following table:

Year.	No. of sheep.	Average value.	Total value.
1893	919,685	\$4.28	\$3,936,251.80
1894	792,147	3.36	2,771,613.72
1895	615,718	3.40	2,093,441.20
1896	515,816	3.20	1,650,611.20
1897	468,638	3.28	1,537,132.64
1898	495,017	3.44	1,702,858.48
1899	630,054	3.60	2,268,194.40

It will thus be seen that from 1893 to 1897 there was an annual decline in numbers and that the average value per head fell from \$4.28 to \$3.28. In 1898 the numbers increased as did the value, and again in 1899 both numbers and values increased. These increases of the two last years are not such as to indicate that there has been or that there will be a rushing advance in the sheep industry of the state, but does seem to show a growth of so much healthfulness, that an expectation of increasing numbers and of values in the next and following years is justifiable, and especially so because the most of this increase in numbers has been caused by the purchase by farmers, who have hitherto not kept them, and who have almost to a man found them profitable, and

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Every blade of Grass, every grain of Corn, all Fruits and Vegetables must have it. If enough is supplied you can count on a full crop—if too little, the growth will be "scrubby."



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BIG BUDGET

A book with a little of everything. Contains 20 popular songs with music, 20 amusing rebuses, 101 funny conundrums, 57 tricks in magic, 92 valuable money making secrets, 10 model love letters, and a lot of other matter useful and entertaining. Send us this advertisement with 10 cents when Big Budget will be mailed postpaid. Johnston & McFarlane, 71 Yonge St., Toronto.

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The largest and strongest school in Canada. Our Calendar tells you why. Write for it.

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156 POPULAR SONGS

with WORDS and MUSIC complete, neatly printed and bound in one volume. A grand collection of Musical Gems, sentimental, pathetic, comic; a veritable treasury of the world's popular and beautiful songs. Price, 10 cents, postpaid. JOHNSTON & MCFARLANE, 71 Yonge St., Toronto, Can.



Read our

Market Reports—

They are

Reliable and

Up-to-Date.



4 for 10 Cents.

To introduce our illustrated catalogue we will send four 7-inch Dollies, with instruction Book, for 10 cts. These Dollies are stamped with the latest and prettiest designs on fine linen, and sell regularly at 10 cents each. Johnston & McFarlane, Toronto, Can.

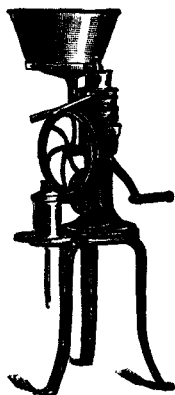
The National Cream Separator

MANUFACTURED BY

THE RAYMOND MANUFACTURING CO.

LIMITED

GUELPH, ONTARIO



A wise investment that progressive farmers are buying as they buy other useful machinery. The National will yield from 1/2 to 1 1/4 lbs. of butter per week per cow more than is being done by the old laborious wasteful methods of skimming milk. One pound of butter per week from one cow for 9 months, at 15c. per lb., will pay 8 per cent. interest on the cost price of the National. Easy to run by boys 8 to 12 years old. Easy to clean. Simple to operate. The neatest in style and finish. A perfect skimmer. Guaranteed as represented, and a trial for one week given to intending buyers. If not satisfactory, may be returned to us at our expense. No risk. Sold on their merits. Send for testimonials and Catalogue.

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MARKET SQUARE, GUELPH, ONTARIO

Also Dealers in Creamery and Dairy Supplies.

LIVE AGENTS WANTED

Style No. 1.
Capacity—330 to 350 lbs. per hour
Price, \$75.00

The BISSELL

Disk Harrows and Steel Land Rollers

Leading Machines for 1900

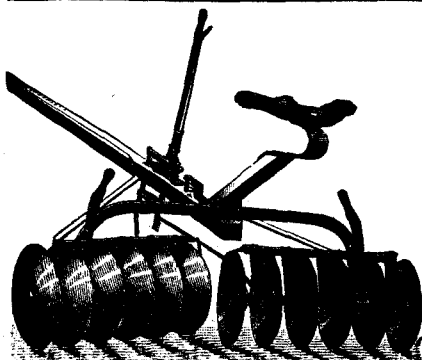
They are the BEST. The BEST is what you need. Choose them in buying.

Address:

T. E. BISSELL,



- FERGUS, ONT.



very handy for supplying their own tables with the best of fresh meat.

The increase in numbers is remarkable for its evenness throughout the state. In 1899, of the 102 counties, ninety-five show an increase over 1898; in six, viz., Calhoun, Douglas, Monroe, Pulaski, Schuyler, and Union, there were slight decreases, aggregating 449 head; with no statement from Cook.

Note.—For 1899 the "statement of property assessed" does not show the numbers of sheep and value in Cook county, hence this county is not included in the above table. Judging from previous statements made from this county during the past six years, 1,000 may safely be relied upon as being near the number therein assessed for this year. J. G. S.

Stock Notes

ANNOUNCEMENT.—Mr. I. E. Brethour, Burford, Ont., writes: Owing to the increasing demand for Oak Lodge Yorkshires, I have found it necessary to greatly extend the facilities for breeding and properly caring for the produce of this herd. With this end in view I have taken in a partner in the person of Mr. C. F. Saunders, whose farm is adjacent to Oak Lodge. No expense or care will be spared to maintain the high standard of excellence secured by the Oak Lodge Yorkshires. All correspondence and other business will be conducted under the firm name of Brethour & Saunders.

CLYDESDALES FOR CANADA.—Messrs. Dalgely Brothers, Dundee, are shipping five well-bred Clydesdale horses to Canada during the next few days. These are Abbey Craig (9452), Magician (10230), Giant Rose (10559), Gold Gift, by the noted Gold Mine (9540), and Prince of Cullicudden, a horse well-known in Inverness-shire. These horses were purchased from Mr. Peter Crawford, Dargavel; Mr. Matthew Marshall, Stranraer, and Mr. George Williamson. They are well-bred animals, the first being got by the H. and A. S. first prize horse, Lord Ailsa (5974), out of a half-sister of the famous Sirdar (4714); the second by Patrician (8095), a son of Prince of Wales (673), which gained first prize at Ayr; the third by the H. and A. S. champion horse, King of the Roses; the fourth as already indicated; and the fifth by the well-known Braelangwell horse, The Rock. These horses should prove good doers in Canada, and their pedigrees should take them into the United States free.—*Scottish Farmer.*

LEGHORNS AT TORONTO SHOW.—Jas. W. McIntosh, of Toronto, made an excellent display of Rose Comb White Leghorns at the December show, exhibiting five birds, winning 1st cock, 1st and 2nd hen, 1st pullet, and 2nd cockerel. The cock bird was a picture, snow white with bright yellow legs, with a well-shaped rose comb and very fine carriage. The hens, well, there was very little difference between the 1st and 2nd prize birds. The pullet, while a late hatched bird, was a perfect Leghorn shape and splendid color. The cockerel was, in our opinion, the best bird in the class, inclined to be a little wild, and, as a consequence, did not show to advantage. Nevertheless, he took the 2nd ribbon. Mr. McIntosh informs us that these birds are very easy to raise after they are hatched; being very lively chicks they soon learn to look out for themselves. They are the most profitable variety for people who

AUCTIONEERS.

COLCOCK & MORDEN, leading live stock Auctioneers, Niagara Falls, Canada Sales conducted anywhere. If you wish to save money, engage this firm. Terms moderate.

How much do you grow?
What's your garden going to yield this year? All depends on the seed. Sow right and the chances are you'll reap right. Sow

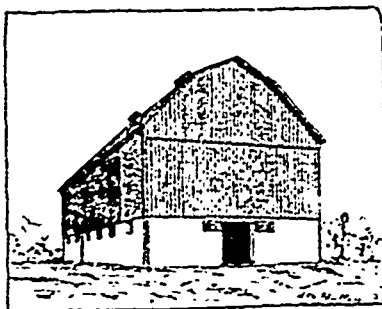
Gregory's Seeds

and you'll get the greatest yield your ground will give. All seeds guaranteed. Year Book for 1900 contains broad range offer to all who grow vegetables or flowers for pleasure or profit. Write for it.

J. J. H. Gregory & Son, Marblehead, Mass.

GREGORY'S SEED CATALOGUE FOR 1900

Thorold Cement...



Do you intend building Barn Basements, or Stable Walls, or Walls of any kind? if so, use "Battle's Thorold Cement," which can truly be called the

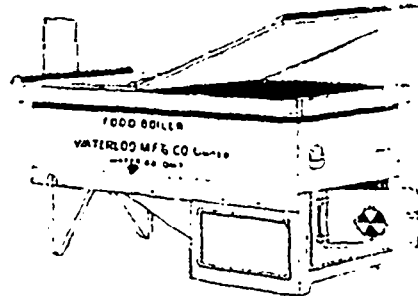
Farmer's Favorite Cement

Mr. J. V. Cooper, of Cedarville Stock Farm, Picton, Ont., the well-known breeder of Shorthorn Durhams and Oxford Down Sheep, who used a large carload, says: "Your cement is a credit to you, and I am more than pleased with my concrete walls."

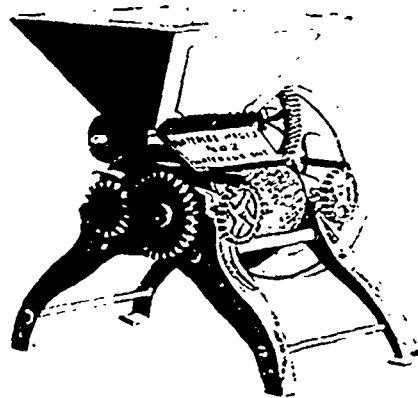
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**ESTATE OF JOHN BATTLE
THOROLD, ONT.**

Food Boiler



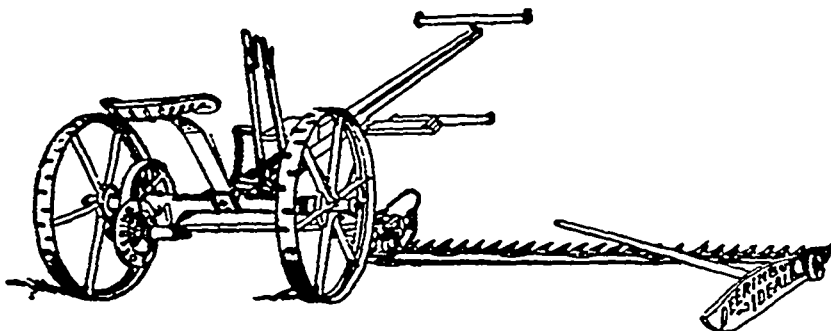
Grain Crusher



Easy-Running, Durable, and of Great Grinding Capacity. Rollers, 16 x 8 1/2 inches. Will grind from 50 to 100 bushels of grain per hour. Surpasses all other grinders. Write for circulars.

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LIMITED
WATERLOO, ONTARIO**

The Machines that made America Famous



DEERING IDEAL MOWER

It starts in the heaviest, toughest grass without backing the team. The best competitors can do is to claim theirs is as good as the DEERING. Only one BEST and that the DEERING.

IT PAYS TO USE DEERING MACHINES

Deering Harvester Company

Main Office and Factory:

Chicago, Ill.

Permanent Branch Houses

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want to build up, or who already have, an egg trade, as they lay more eggs and consume less food than any other variety of domestic fowl, and there are no frozen combs to contend with. If you are looking for a good thing, something that you will feel proud of, write him for stock or eggs. You will be well treated, and, if not satisfied, get your money back.

Publisher's Talks.

Why Pay in Advance?

It is a rule with the best-managed and most successful newspaper offices that subscriptions should, as far as possible, be paid in advance. Subscribers sometimes ask — "Why pay for something before you get it?"

The farmer does not get a bank draft for his load of grain until it is marketed—till the goods are delivered.

If the newspaper publisher were to follow this plan and not expect his money until the end of the year—what would it mean in the case of FARMING, by that time fifty-two numbers would have been produced—blank paper on which to print them bought and paid for—the cost of printing settled—all expense in the way of engraving and the securing of business made an outlay before any return was received.

Thoughtful farmers will see the point. The production of a paper like FARMING is a heavy item of expense each week, and the fact that only those papers that are indifferent about the value they give readers pursue a plan of indifference regarding payment of subscriptions is good evidence that the "pay in advance" method is the proper one.

This setting of the case may possibly have an influence on some of our good friends who have hesitated on this point, and we may expect that the next mail will bring their subscriptions for 1900.

A Minute or Two.

The newspaper publisher receives many queer communications. Let the slightest slip be made and the publisher is severely blamed, readers forgetting the thousands of subscribers whose wants require individual attention. But not unfrequently the subscriber who grows has no cause for the growl. Take this letter: "Enclosed you will find \$1.25 for what you claim we are in your debt for FARMING, and please stop the paper at once, as we do not want to deal with people who do not carry out their agreement honestly." We omit the name for obvious reasons, and we cannot give the place, for no post office is given in the letter. And here is the explanation of not a few cross letters that reach the publisher. People make remittances, sometimes forgetting to sign their names, and, as in this case, and there are others, forgetting to give the address. We will get another letter likely from this subscriber wanting to know why we have not acknowledged his remittance, and why his paper is not stopped. How could we?

Our legislatures have made wise provision for the protection of publishers against what is only, sometimes, gross carelessness. Often a subscriber removes to another post-office and neglects to notify the publisher of the change of address. How is he to know their removal has taken place? The paper necessarily goes along to the old address, and, it being no fault of the publisher that the subscriber has not had the paper for some time, the legislature says that the fact is not just cause for refusing payment for the entire time the paper has been continued in good faith to the old address.

The publishers of FARMING, with an opportunity to study the various agricultural papers published, are convinced that FARMING leads the list in Canada, and is perhaps not surpassed by the agricultural papers of any country. We are glad to find readers themselves saying this kind of thing, as witnessed by this letter, marked private, from a subscriber and whose name for this reason we cannot disclose: "I find your paper (FARMING) to be the most practical of all the

agricultural papers published in the Dominion. It is intensely useful to me, as owing to the extreme economy of the Department of Agriculture of the Province of Quebec I am greatly restricted as to paid contributions."

A western Congressman noted for being always elegantly dressed, spoke recently at a public meeting. A political opponent remarked that the opening of his speech was dry but his close was brilliant.

VIRGINIA FARMS for SALE—Good land, good neighbors, schools and churches convenient. Mild, healthy climate, free from extremes of both heat and cold. Low prices and easy terms. Write for free catalogue. **R. B. CHAFFIN & CO (Inc.)**, Richmond, Va.

FOR SALE

SHORTHORNS—4 young bulls for sale from 3 to 14 months old, also some young cows and heifers. **JAMES BROWN**, Thorold.



SEND US 15c. and we will send you post-paid the little **SKATE SHARPENER** ever invented—can be carried in the vest pocket—no wearout to it—a keen razor edge without removing what's from the feet. **Grand Active Act's** Wanted. They will at once give a chance to make a little pocket money quickly. **Enterprise Mfg. Co.** Toronto, Ont.

KENDALL'S... SPAVIN CURE



The old reliable remedy for Spavins, Ringbones, Splints, Curbs and all forms of Lameness. It cures without a blister because it does not blister. North Westchester, Ont., Feb. 10, '98.

Dr. R. J. Kendall Co. Dear Sir:—Will you please give me a remedy for heaves. I have a mare that is affected. I take pleasure in stating that I have cured a curb of four years' standing with your Kendall's Blister, by using it only once and then applying your Spavin Cure. As long as I have horses, I will not be without Kendall's Spavin Cure and Kendall's Blister in my stable. Very truly yours, ADOLPHUS GAUTHIER.

Price \$1.50 for \$5. As a liniment for family use it has no equal. Ask your druggist for Kendall's Spavin Cure, also "A Treatise on the Horse," the book free, or address **DR. R. J. KENDALL CO., ENOSBURG FALLS, VT.**

VICTOR HAY PRESS

AUTOMATIC FOLDER,



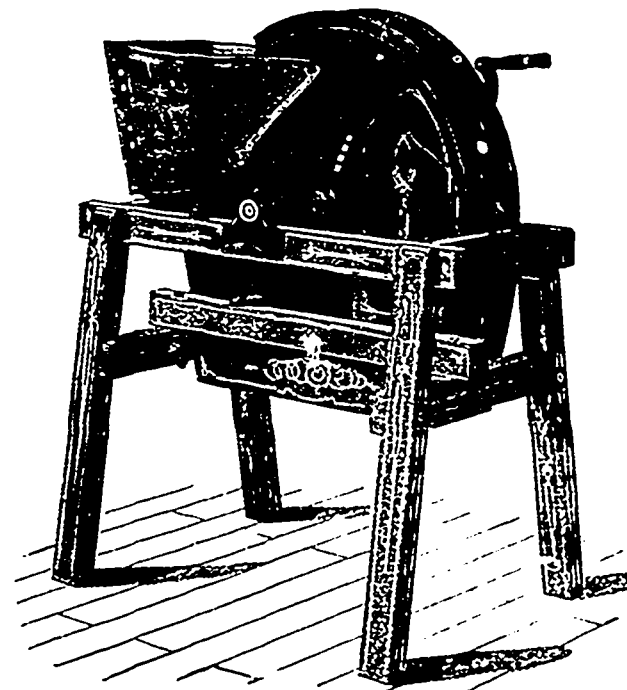
Double acting Perpetual Hay and Straw Press

One reason why these presses are the best. No lifting out of ground with lifting jacks, etc., and no telescoping of machines and power to bring same in condition for moving, as experienced by other presses.

THE STEVENS' MFG. CO.

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New Root Cutter (Pulper and Slicer combined)

THE NOXON CO.

(LIMITED)
Ingersoll, Ont.

MANUFACTURERS OF

HIGH-GLASS FARM IMPLEMENTS

Please write for Price List and Descriptive Catalogue.

Market Review and Forecast

Office of FARMING,
Confederation Life Building,
Toronto, Jan. 15th, 1900.

General trade continues favorable and the outlook for 1900 is good. Manufacturers and wholesale houses assert that if the present year's trade is as good as 1899 they will be satisfied. Present indications are that it will be equally as good. The only thing just now that is likely to hamper it much is the stringent condition of the money market. Though it has been difficult of late to secure money for speculative purposes, there has been a sufficient amount for legitimate trade and so long as this continues no set back is likely to occur from that quarter.

Wheat.

There is no material change in the wheat situation in so far as prices are concerned. While this is so there are signs of a better feeling in the world's wheat centres, though Chicago has fluctuated considerably. The stringency in European money markets on account of the war is having some effect on the wheat trade and is preventing dealers from buying in large quantities and who are largely doing a hand to mouth business. This is having a distressing effect upon the export trade from this side and is one of the chief causes of the dulness generally prevailing in American wheat markets. Besides, the scarcity of ocean vessels space owing to so many being taken for transport service has increased freight rates and produced a corresponding lowering of values. There is a tendency in all wheat countries not to market wheat at present values. Whether this will tend to raise values remains to be seen. The Argentine crop is reported to be large. The world's wheat stocks on Jan. 1st are computed at 164,000,000 bushels, showing an increase of 46,000,000 bushels as compared with those of Jan. 1st, 1899. While this is so, there has been a large decrease in the visible supply in the United States and Canada, and also in England. Best authorities agree that at the present level of prices the market has an innate strength, which would indicate that values will not go any lower.

Cable reports are firmer. Stocks of Manitoba are reported to be light in England. Considerable is doing in Manitoba at Montreal and some export inquiry is experienced for Ontario spring wheat, which brings about 65½c. f.o.b. east of Toronto. Ontario millers are reported buying red winter wheat west of here at 65c. On Toronto farmers' market red and white bring 69c., spring file 68½c., and goose 69 to 70c. per bushel.

Oats and Barley.

The English market for Canadian oats is quieter but stocks are reported light. An easier feeling is reported on this side with about 25c. the ruling figure at country points. Some shipments have been made to the Maritime Provinces. Prices here are unchanged at 25 to 25½c. west. On farmers' market oats bring 29½ to 30c. per bushel.

Barley is dull at Montreal and prices are more or less nominal. Here prices are 38 to 39c. for No. 2 west, and 35 to 36c. for feed barley. On Toronto farmers' market barley brings 43 to 45c. per bushel.

Peas and Corn.

Peas are generally quiet at about 57 to 57½c. f.o.b. Ontario points for immediate shipment. On farmers' market here they bring 60c. per bushel.

Corn in Western States is firm and above a shipping basis. American corn is quoted here at 39 to 41c. as to quality on track Toronto.

Bran and Chaff.

Ontario bran is in demand at Montreal at \$15 to \$15.25, with \$15.50 quoted at Eastern Ontario points in car lots. At Montreal shorts sell for \$16 to \$17 in car lots. City mills here sell bran at \$14 and shorts at \$15 f.o.b. Toronto. West of here bran is reported selling at \$13 in car lots.

Eggs and Poultry.

The English egg market is quieter, though stocks are light. At Montreal new-laid eggs are scarce and firm at 25 to 26c. in large lots, with higher prices reported for some lots. All other kinds are quieter. There has been some heavy speculation in stored eggs in the United States, but it is expected that there will be a great break in prices there soon. There is a good demand with steady prices at Toronto. New-laid eggs in job lots bring 23 to 25c., and held stock 17 to 18c. On the farmers' market new-laid bring anywhere from 25 to 35c.

Dressed poultry at Montreal has declined, but there is a steady feeling, and stocks are not large. Choice turkeys are quoted at 8½ to 9c., chickens 6 to 6½c. and ducks 7½ to 8½c., and geese 5 to 6½c. per lb. in large lots. Supplies here are light, with steady prices at 8½ to 9½c. for turkeys, and 5½ to 6½c. per lb. for geese, and ducks 45 to 65c., and chickens 20 to 40c. per pair, in large lots. On Toronto farmers' market prices are as follows: Turkeys, 10 to 12c., and geese, 7 to 9c. per lb., and chickens, 40 to 50c., and ducks, 60c. to \$1 per pair.

Potatoes.

These are quoted at 45 to 47c. in car lots on track, Montreal. Prices are steady here at 38 to 40c. per bag in car lots. On farmers' market they bring 45 to 55c. per bag.

Apples.

All good fruit arriving in England of late has done well, and has made up for losses on previous shipments. Some returns of late shipments show choice Baldwins netting as high as \$4.25 at Ontario points, Kings, \$3.25, Spies, \$3.10, and other lots, \$2 to \$2.75 per bbl. These should be satisfactory to shippers, and show that good, sound, honestly-packed fruit will command paying prices. On Toronto farmers' market apples bring from \$1.50 to \$3.50 per bbl.

Hay and Straw.

Market continues firm for baled hay. At country points east some large sales have been made at \$7.50 f.o.b. for No. 2. This is equal to \$8.50 at Montreal. The Government has already shipped about 3,800 tons, but it is expected that further shipments will be made when the second contingent goes. Holders seem to be steadily advancing prices on what they have to sell. Cars of No. 1 timothy are quoted here at \$8.50 to \$9.50 in car lots, and \$4 to \$4.50 for baled straw. On Toronto farmers' market hay brings \$10.50 to \$11.50, mixed \$9 to \$10, sheaf straw \$7 to \$8, and loose straw \$4 to \$5 per ton.

Seeds.

In spite of an easier feeling in the United States the markets on this side keep fairly steady. At Montreal timothy seed is quoted at \$1.30 to \$1.75, red clover at \$4.25 to \$5.25 and flax seed at \$1.25 to \$1.75. On Toronto farmers' market red clover brings \$4.25 to \$5.20, Alsike \$5 to \$7, and white clover \$7 to \$8 per bushel.

Cheese.

Though New Zealand cheese is arriving in England in fairly large quantities the market keeps firm at steady prices. London quotations are 60 to 61s. for finest Ontario and 58 to 60s.

for finest Quebecs. The *Trade Bulletin* gives the total exports from Montreal, St. John, Portland, Boston and New York to date as follows:

	1900.	1899.
From Montreal, Portland and St. John to date.....	2,064,425	2,077,596
From Boston.....	36,732
From New York.....	324,933	328,215
	2,426,140	2,405,811
Increase, boxes.....	20,329

One of the features of the market is the comparatively high prices being paid for under-grades, which easily command 11½c., while cable limits for finest do not go beyond 12c. There is considerable business doing in a quiet way and English houses are increasing their orders, showing that they want the goods and may be induced to pay higher prices. They are evidently doing a hand-to-mouth business:

Butter.

Owing to some large arrivals of Australian butter the English market has shown a weaker tendency. Canadian creamery was quoted at London last week at 90 to 100s. The total shipments of butter from the Antipodes to London for the present season up to Dec. 28 last were 723,206 boxes, as against 458,815 boxes for the same period last year, showing a large increase. The shipments from this side to date are compiled as follows:

	1900.	1899.
From Montreal, Portland and St. John to date.....	468,996	326,207
From Boston.....	815
From New York.....	107,953	70,474
	577,764	397,681
Increase, pkgs.....	180,083

Considerable Canadian butter continues to find its way to the States on account of the high prices there. One lot of choice Ontario creamery sold at 29½c. at New York. There has been quite a lot of smuggling of butter along the Quebec border line, American buyers having paid 24 to 25c. for butter delivered close to the boundary, they taking the chances of getting it across, but this will not likely continue long. The Montreal market keeps firm under light supplies with sales of choice creamery reported at 21½ to 22c. on local account and 21 to 21½c. for seconds. The export demand is light. There is a great scarcity there of dairy butter, which brings all the way from 19 to 21c. as to quality. Western dairy is quoted at 18 to 20c. in large lots. Creamery is steady here at 21 to 21½c. for tubs and 22 to 23c. for prints. Choice dairy tubs are scarce at 19 to 20c., medium 17 to 18c. and inferior 16½ to 17c. in large lots. On Toronto farmers' market lb. rolls bring 20 to 25c. per lb.

Cattle.

Receipts of good cattle at Chicago, Buffalo, and other American points during the week have been light. These command good prices, while common and medium stuff and unripe cattle have been weaker and too plentiful. It was expected that last week would clean up the effects of the holiday business and that higher prices may be looked for. Cables at the end of the week showed a decline of 12 to 13c. for American cattle. At Toronto cattle market on Friday there was a fair run of live stock consisting of 608 cattle, 2,067 hogs, 841 sheep and lambs, and a few calves. The quality of fat cattle was only fairly good. Trade was fairly brisk, especially for the better qualities. Nearly all the offerings were bought up by noon.

Export Cattle.—Choice lots of these sold at \$4.75 to \$5.12½, and light ones at \$4.40 to \$4.60 per cwt. Heavy export bulls sold at \$4 to \$4.50, and light ones at \$3.40 to \$3.65 per cwt.

Butchers' Cattle.—Choice picked lots of these, equal in quality to the best exporters, and weighing 1,000 to 1,100 lbs. each, sold at \$4.25 to \$4.40, good butchers' cattle at \$3.70 to \$4, medium \$3.40 to \$3.60, and inferior to common \$2.75 to \$3.30 per cwt.

Feeders.—Very few feeders of any kind are coming forward, but choice, well-bred, heavy steers, weighing 1,050 to 1,200, bring \$3.80 to \$4 per cwt. Light steers, weighing 800 to 950 lbs. each, are scarce with prices firm at \$3.40 to \$3.75 per cwt. Feeding bulls bring \$3 to \$3.50 per cwt.

Stockers.—Yearling steers 500 to 600 lbs. in weight are firmer at \$3 to \$3.25, while heifers and black and white steers of the same weight sold at \$2.25 to \$2.75 per cwt.

Milch Cows.—There were twenty-four cows and springers offered on Friday, which sold at from \$30 to \$45 each.

Sheep and Lambs.

Canada lambs sold at Buffalo on Friday on a basis of \$6 per cwt. and the market closed weaker. At Toronto market lambs sold at \$4 to \$4.65 per cwt., with a few choice lots of ewes and wethers for export bringing \$4.50 to \$4.75 per cwt. Prices were easier for sheep at \$3.25 to \$3.40 for ewes and \$2.50 per cwt. for bucks. Butchers' sheep sold at \$2 to \$2.50 each.

Hogs.

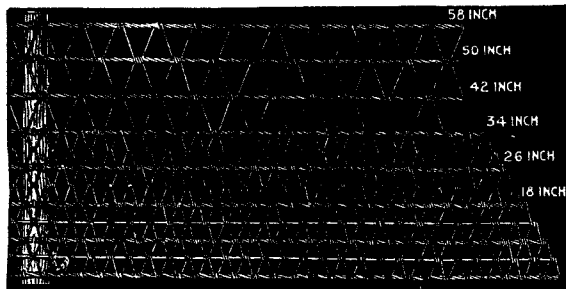
The deliveries of hogs were large with prices steady. Prices for choice select bacon hogs weighing 160 to 200 lbs. each, unfed and unwatered, off cars have advanced to \$4.50 per cwt. Thick fats sold at \$3.87½ and light fats at \$4.12½. The bulk of the hogs sold at \$4.30 to \$4.40 for uncullled lots. The quality was much better than for some time past, fewer thick fats coming forward. For the corresponding Buffalo market quotations were as follows: Heavy were quotable at \$4.75; mixed, \$4.70 to \$4.75; Yorkers, \$4.55 to \$4.65; pigs, \$4.50; roughs, \$4.05 to \$4.10; stags, \$3.25.

At Montreal prices show little change, packers paying \$4.25 to \$4.35 for choice lots and \$4.10 to \$4.15 for heavy weights. The *Trade Bulletin's* (London, Eng.) cable of January 11th, re Canadian bacon, reads thus: "There has been a steadier market, and under light supplies values have advanced 2s. per cwt., and at the advance there is a good demand.

Horses.

The orders received by the Canadian Government for horses for the British army in South Africa, as announced elsewhere, has created a little more activity in the horse market. That trade will require only a certain type, and the price to be paid is not to exceed \$150 each. But, in addition to this, there is a better movement in horses all around, and present indications point to an active spring trade. At Grand's Repository during the week several lots of good, serviceable horses sold quickly at good figures. The kind that sell best are good, solid, blocky horses, weighing about 1,300 to 1,400 lbs., and tall, rangier ones, weighing about 1,500. For good teams of this class it is not hard to get \$300.

An Indiana grocer prints the following in his circular, addressed to patrons: "Notice is hereby given that if you come to my store three times a day during the next year, and purchase a drink of whiskey each time, paying ten cents a drink, at the end of the year I will donate five barrels of my best flour, 100 pounds of fine granulated sugar, 100 pounds of rice, 10 pounds of coffee, 10 gallons of syrup, 50 yards of calico, three pairs of shoes, one \$10.50 cloak for your wife; and then I will have \$20 left to pay for the liquor you drank."



HOGS WILL ROOT

but the hog hasn't been bred that will tear up or break through the

ELLWOOD WOVEN FENCE.

Made of hard Bessemer Steel Wires, rust proof, and proof against all attacks of animals, heat or cold, dry or wet, wind or weather. Although the best, the **Ellwood costs but little** and is practically everlasting. Your dealer ought to have it. If he hasn't write for catalogue, etc., to

AMERICAN STEEL & WIRE CO., Chicago or New York.

ALEXANDRA AND MÉLOTTE CREAM SEPARATORS

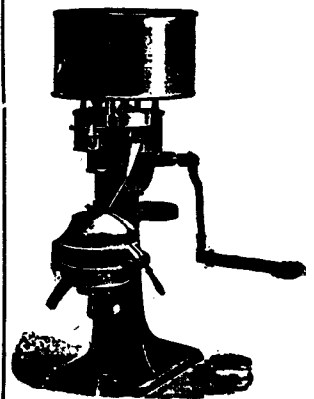
We ask all intending buyers of Cream Separators to study the merits of the "Melotte," if they want to get the best results. The "Melotte" has beaten all competitors in public working trials. Takes one-third less power. Sent on free trial.

For full particulars apply to

R. A. LISTER & CO., Limited

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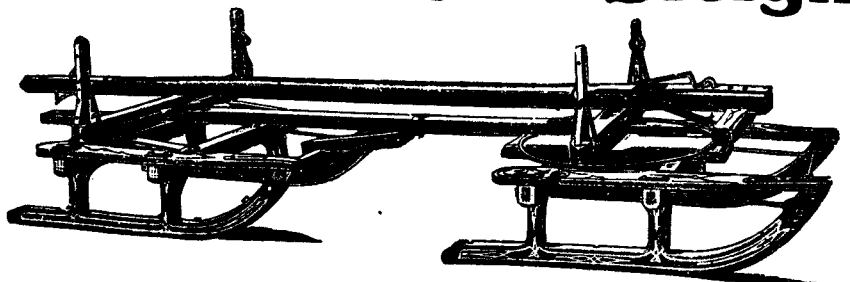


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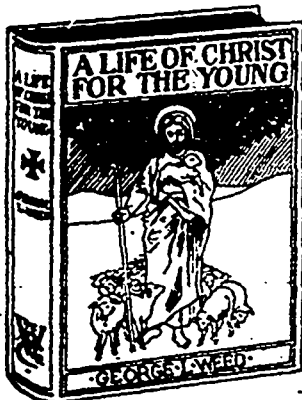
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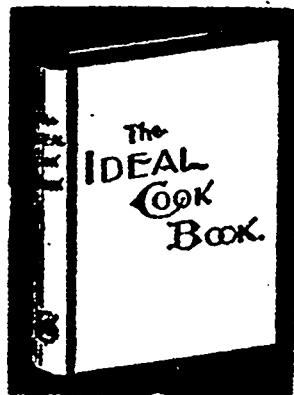
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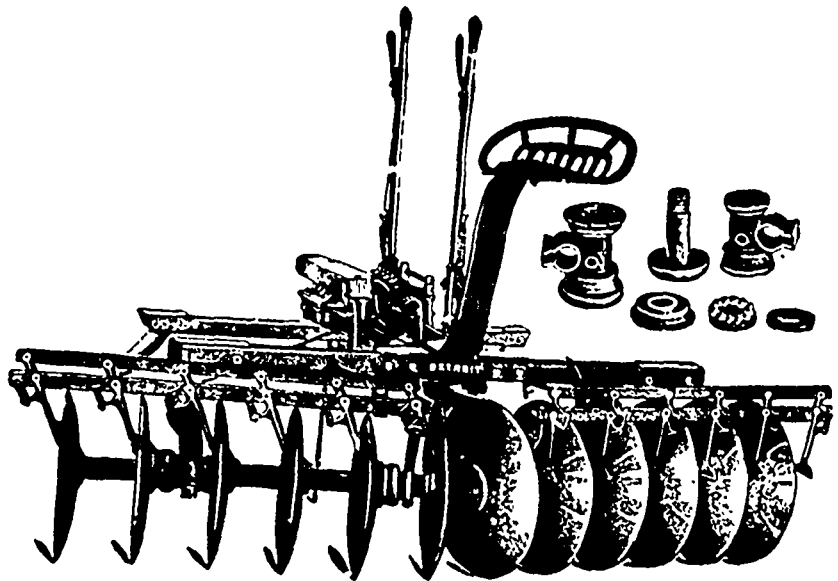
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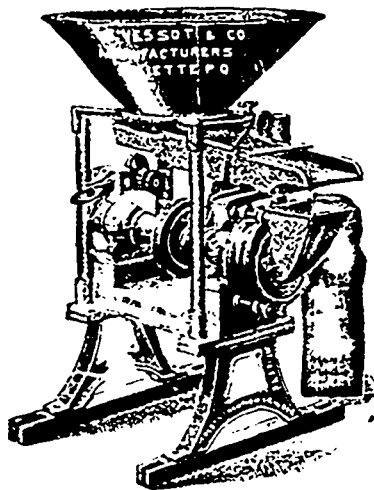
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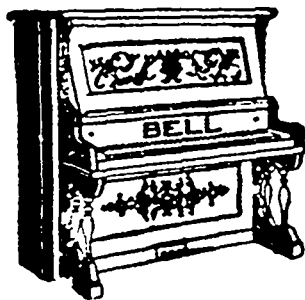
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